



Sweet Living Steady Progress
January 13, 2016

**Town of Orange
Town Manager's Office**

119 Bellevue Avenue, Orange, Virginia 22960
Phone: (540) 672-5005 Fax: (540) 672-4435
Email: townmanager@townoforangeva.org

Anna Westernik
Environmental Specialist Senior II
DEQ-NRO Pretreatment Coordinator
13901 Crown Court
Woodbridge, VA 22193-1453

Re: Town of Orange Wastewater Treatment Plant, (VPDES Permit No. VA0021835) VPDES permit renewal application, EPA Form 3510-2A, B, C, D and VPDES Sewage Sludge Permit Application Form.

Dear Ms. Westernik:

The Town of Orange is submitting one original and one electronic copy of the VPDES renewal application and VPDES Sewage Sludge Permit application 180 days before the Wastewater Treatment Plant permit expires August 1, 2016.

The current permit has a few parameters that need to be removed or adjusted due to lack of chemical use and the plant process consistently producing low effluent metal results and CBOD₅ results.

- Total Chlorine Residual – Chlorine chemicals have not been used in our current treatment process for the past four years.
- Total Recoverable Copper – Data results over the past five years show Cu BDL or less than half the permitted limit of 9.6 ug/L.
- Total Recoverable Zinc – Data results over the past five years show lower results than our permitted limit of 87 ug/L.
- Carbonaceous Biochemical Oxygen Demand – Over the past five years the plant has constantly produced effluent results of 0.0 mg/L five days a week. If we cannot remove the CBOD₅ parameter from the DMR than perhaps we can reduce the testing frequency to three days a week. The plant is a 3.0 MGD plant but the current flows are only a third of the capacity. If our flows increase to half or full capacity then we could go back to testing five days a week.

Enclosed is a 7-Day influent and effluent testing of Cu, Zn and Hardness that shows that the plant has consistently low influent metals and produces consistently low effluent Cu and Zn results.

If you have any questions, please contact Michelle Steinberger, at 540-672-3112 or ams@townoforangeva.org.

Sincerely,

Town of Orange

Gregory S. Woods
Town Manager

GSW/wjc

FACILITY NAME AND PERMIT NUMBER:

Town of Orange WWTP - VA0021385

Form Approved 1/14/99

OMB Number 2040-0086

FORM
2A
NPDES

NPDES FORM 2A APPLICATION OVERVIEW

APPLICATION OVERVIEW

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

BASIC APPLICATION INFORMATION:

- A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.
- B. **Additional Application Information for Applicants with a Design Flow ≥ 0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.
- C. **Certification.** All applicants must complete Part C (Certification).

SUPPLEMENTAL APPLICATION INFORMATION:

- D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):
 1. Has a design flow rate greater than or equal to 1 mgd,
 2. Is required to have a pretreatment program (or has one in place), or
 3. Is otherwise required by the permitting authority to provide the information.
- E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):
 1. Has a design flow rate greater than or equal to 1 mgd,
 2. Is required to have a pretreatment program (or has one in place), or
 3. Is otherwise required by the permitting authority to submit results of toxicity testing.
- F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:
 1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
 2. Any other industrial user that:
 - a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
 - b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
 - c. Is designated as an SIU by the control authority.
- G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)

BASIC APPLICATION INFORMATION**PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:**

All treatment works must complete questions A.1 through A.8 of this Basic Application Information packet.

A.1. Facility Information.Facility name Town of Orange Wastewater Treatment Plant (WWTP)Mailing Address 13222 Spicers Mill Road Orange, VA 22960Contact person Gregory S. WoodsTitle Town ManagerTelephone number (540) 672-5005Facility Address 13222 Spicers Mill Road Orange, VA 22960

(not P.O. Box)

A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant name _____

Mailing Address _____

Contact person _____

Title _____

Telephone number _____

Is the applicant the owner or operator (or both) of the treatment works? owner operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

 facility applicant**A.3. Existing Environmental Permits.** Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).NPDES VA0021385

PSD _____

UIC _____

Other General Permit Nutrient Removal VAN020025

RCRA _____

Other Sludge Permit VAL0021385**A.4. Collection System Information.** Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
<u>Town of Orange</u>	<u>3,150</u>	<u>Separate</u>	<u>Town of Orange</u>
<u>Orange County</u>	<u>350</u>	<u>Separate</u>	<u>Town of Orange</u>
Total population served <u>3,500</u>			

A.5. Indian Country.

a. Is the treatment works located in Indian Country?

 Yes No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

 Yes No

A.6. Flow. Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate	3.0 mgd	<i>Oct 2012 - Sep 2013</i> <u>Two Years Ago</u>	<i>Oct 2013 - Sept 2014</i> <u>Last Year</u>	<i>Oct 2014 - Sept 2015</i> <u>This Year</u>
b. Annual average daily flow rate	1.043		1.096	0.856 mgd
c. Maximum daily flow rate	3.044		4.377	2.817 mgd

A.7. Collection System. Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

<input checked="" type="checkbox"/> Separate sanitary sewer	100 %
<input type="checkbox"/> Combined storm and sanitary sewer	%

A.8. Discharges and Other Disposal Methods.a. Does the treatment works discharge effluent to waters of the U.S.? Yes No

If yes, list how many of each of the following types of discharge points the treatment works uses:

- i. Discharges of treated effluent
- ii. Discharges of untreated or partially treated effluent
- iii. Combined sewer overflow points
- iv. Constructed emergency overflows (prior to the headworks)
- v. Other

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.? Yes No

If yes, provide the following for each surface impoundment:

Location: _____

Annual average daily volume discharged to surface impoundment(s) _____ mgd

Is discharge _____ continuous or _____ intermittent?

c. Does the treatment works land-apply treated wastewater? Yes No

If yes, provide the following for each land application site:

Location: _____

Number of acres: _____

Annual average daily volume applied to site: _____ Mgd

Is land application _____ continuous or _____ intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works? Yes No

FACILITY NAME AND PERMIT NUMBER:

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If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

If transport is by a party other than the applicant, provide:

Transporter name: _____

Mailing Address: _____

Contact person: _____

Title: _____

Telephone number: _____

For each treatment works that receives this discharge, provide the following:

Name: _____

Mailing Address: _____

Contact person: _____

Title: _____

Telephone number: _____

If known, provide the NPDES permit number of the treatment works that receives this discharge. _____

Provide the average daily flow rate from the treatment works into the receiving facility. _____ mgd

- e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)? _____ Yes No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

Annual daily volume disposed of by this method: _____

Is disposal through this method _____ continuous or _____ intermittent?

FACILITY NAME AND PERMIT NUMBER:

Town of Orange WWTP - VA0021385

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If you answered "yes" to question A.8.a, complete questions A.9 through A.12 once for each outfall (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. If you answered "no" to question A.8.a, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.a. Outfall number 001

b. Location	<u>Town of Orange</u> (City or town, if applicable)	<u>22960</u> (Zip Code)
	<u>Orange</u> (County)	<u>VA</u> (State)
	<u>W 78 09' 21.3"</u> (Latitude)	<u>N 38 1.5' 56.8"</u> (Longitude)

c. Distance from shore (if applicable) N/A ft.d. Depth below surface (if applicable) N/A ft.e. Average daily flow rate 0.998 mgd *3 yrs data*f. Does this outfall have either an intermittent or a periodic discharge? Yes ✓ No (go to A.9.g.)

If yes, provide the following information:

Number of times per year discharge occurs: _____

Average duration of each discharge: _____

Average flow per discharge: _____ mgd

Months in which discharge occurs: _____

g. Is outfall equipped with a diffuser? Yes ✓ No**A.10. Description of Receiving Waters.**a. Name of receiving water Rapidan River

b. Name of watershed (if known) _____

United States Soil Conservation Service 14-digit watershed code (if known): _____

c. Name of State Management/River Basin (if known): Rappahannock

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): _____

d. Critical low flow of receiving stream (if applicable):

acute _____ cfs chronic _____ cfs

e. Total hardness of receiving stream at critical low flow (if applicable): _____ mg/l of CaCO₃

A.11. Description of Treatment.

- a. What levels of treatment are provided? Check all that apply.

Primary Secondary
 Advanced Other. Describe: _____

- b. Indicate the following removal rates (as applicable):

Design BOD ₅ removal or Design CBOD ₅ removal	98	%
Design SS removal	98	%
Design P removal	94	%
Design N removal	88.5	%
Other	_____	%

- c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

UV Disinfection

If disinfection is by chlorination, is dechlorination used for this outfall? Yes No

- d. Does the treatment plant have post aeration?

Yes No

A.12. Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 001

Data enclosed

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.9	s.u.	_____	_____	_____
pH (Maximum)	7.9	s.u.	_____	_____	_____
Flow Rate	2.030	MGD	0.911	MGD	Daily - 6 Months
Temperature (Winter)	13.6	C	11.6	C	Daily - 3 Months
Temperature (Summer)	25.0	C	23.2	C	Daily - 3 Months

* For pH please report a minimum and a maximum daily value

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		

CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.

BIOCHEMICAL OXYGEN DEMAND (Report one)	BOD-5 CBOD-5	N/A mg/L	N/A 0.15	N/A mg/L	N/A 67	N/A SM5210 B'01	
FECAL COLIFORM	5.0	MPN	1.08	MPN	92	Colilert 24	
TOTAL SUSPENDED SOLIDS (TSS)	4.5	mg/L	1.32	mg/L	67	SM2540D'97	

END OF PART A.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

BASIC APPLICATION INFORMATION**PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).**

All applicants with a design flow rate \geq 0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

B.1. Inflow and Infiltration. Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

200,000 gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

The town recently replaced the entire sewer line on Byrd Street. They also fixed some small problems in town.

B.2. Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

- a. The area surrounding the treatment plant, including all unit processes.
- b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- c. Each well where wastewater from the treatment plant is injected underground.
- d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

B.3. Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g., chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.**B.4. Operation/Maintenance Performed by Contractor(s).**

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? Yes No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: _____

Mailing Address: _____

Telephone Number: _____

Responsibilities of Contractor: _____

B.5. Scheduled Improvements and Schedules of Implementation. Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

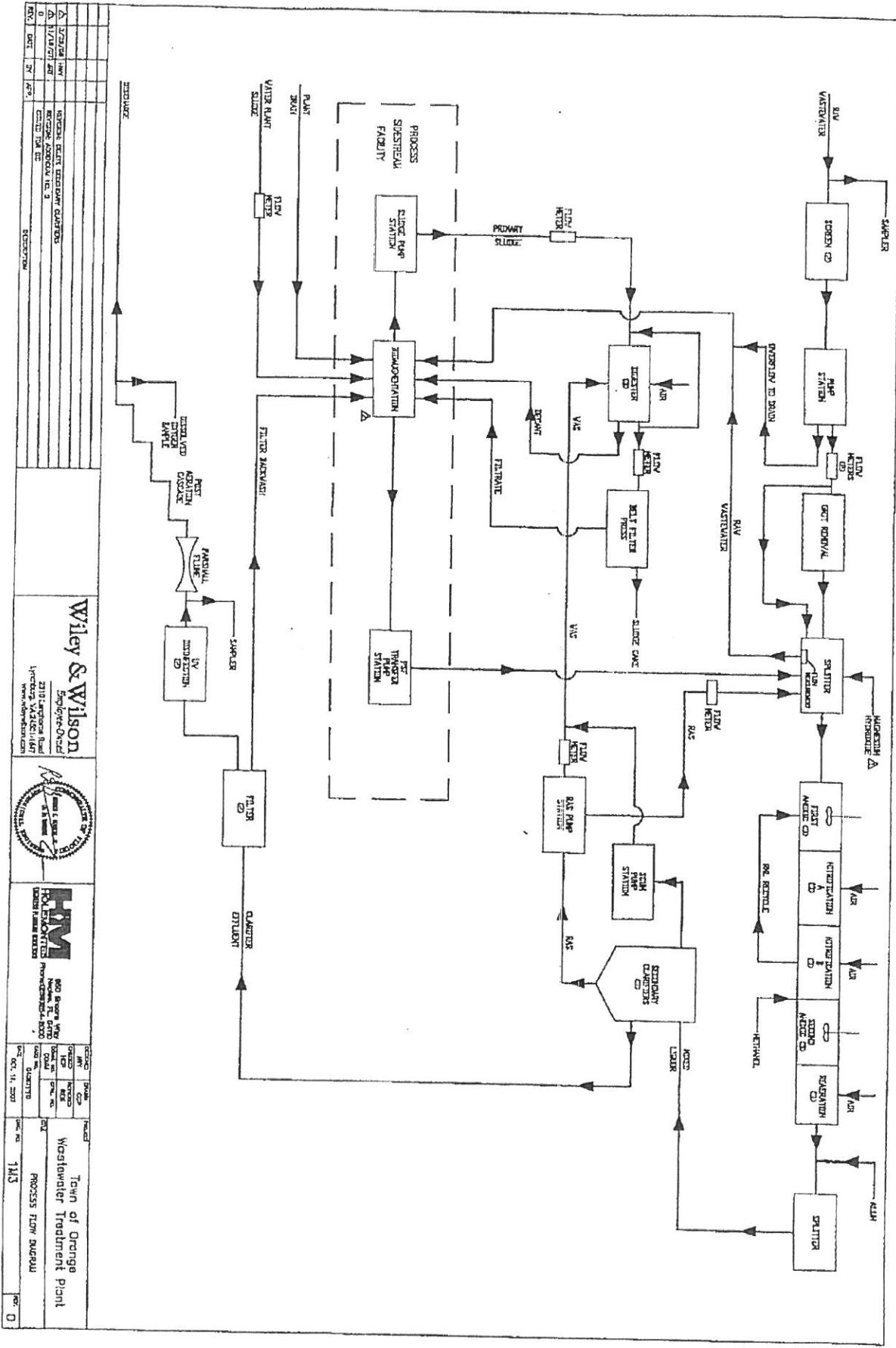
- NA*
- a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

- b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

Yes No

Town of Orange Wastewater Treatment Plant Description

The WWTP is designed to treat 3.0 MGD while meeting limits of CBOD <5.0 mg/L, TSS < 5.0 mg/L, TN < 4.0 mg/L, TP < 0.3 mg/L. The treatment process includes mechanical band screens, grit removal, 4-stage Bardenpho activated sludge process for biological nutrient removal, secondary clarifiers, disk filters, UV disinfection and cascade aeration. When pH adjustment is needed, Magnesium Hydroxide will be added at the beginning of the biological treatment process. Methanol or Micro-C Glycerin will be added at the second anoxic zone to achieve lower TN levels during cold months. Alum will be added before the clarifiers to aid settling and to facilitate the removal of copper and phosphorus. Influent pump station overflow, disk filter backwash, digester decant, belt press filtrate, tank drain water/sludge and water plant sludge will be sent to the Bio-augmentation tank where the water will be returned to the head of the biological treatment process and sludge will be sent to the aerated sludge holding tanks (ASHT). Sludge will be held in aerated sludge holding tanks and dewatered via belt filter press. The sludge will be disposed of at the Orange County Landfill. Land application via contract will be used as an alternate method of sludge disposal. The town will contact DEQ 90 days prior to land application of sludge with the contractor names. The contractors will fill out section C of the sludge application.



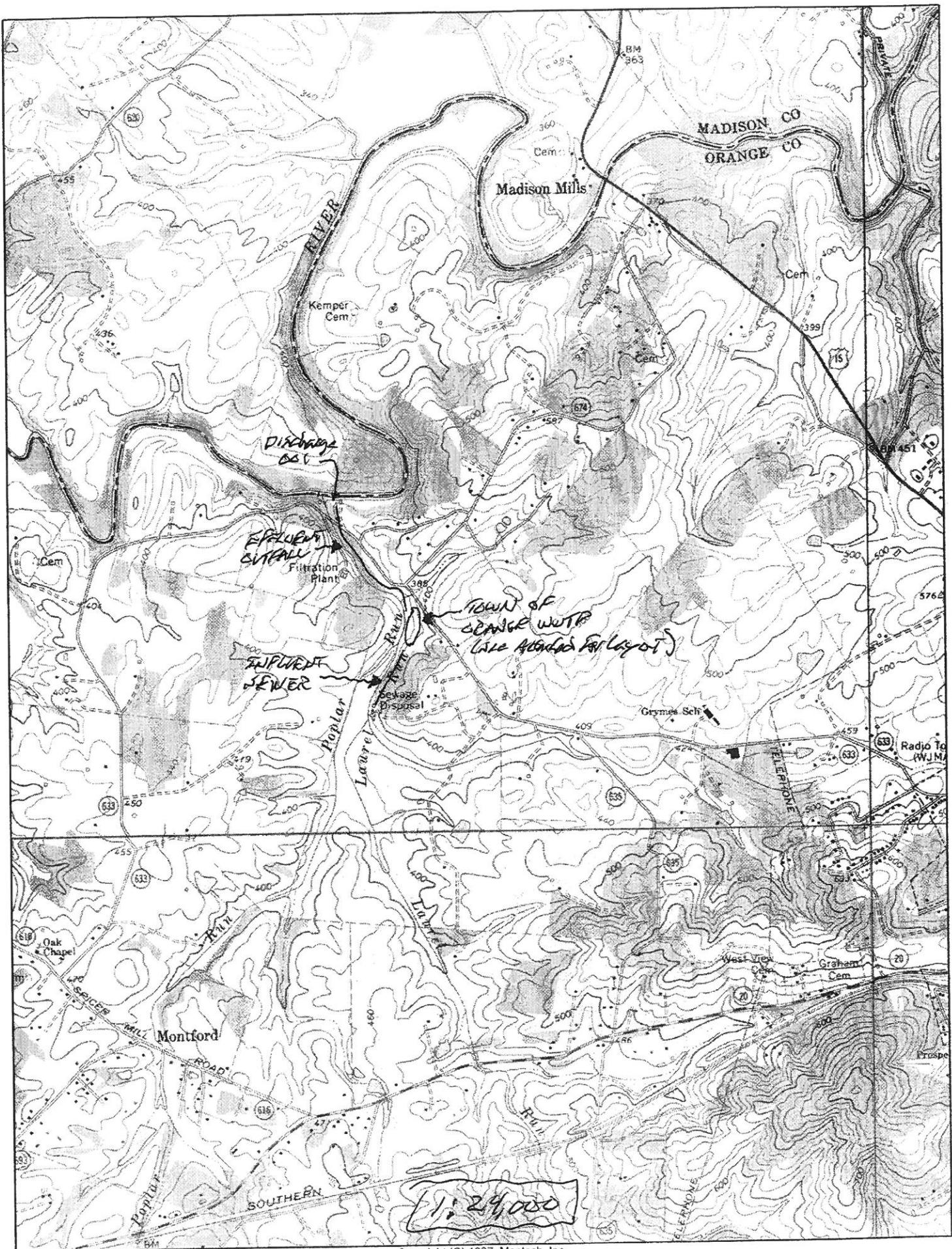


Figure 2 – Section of U.S.G.S. Topographic Map 185C – Madison Mills (and 185D Rapidan)

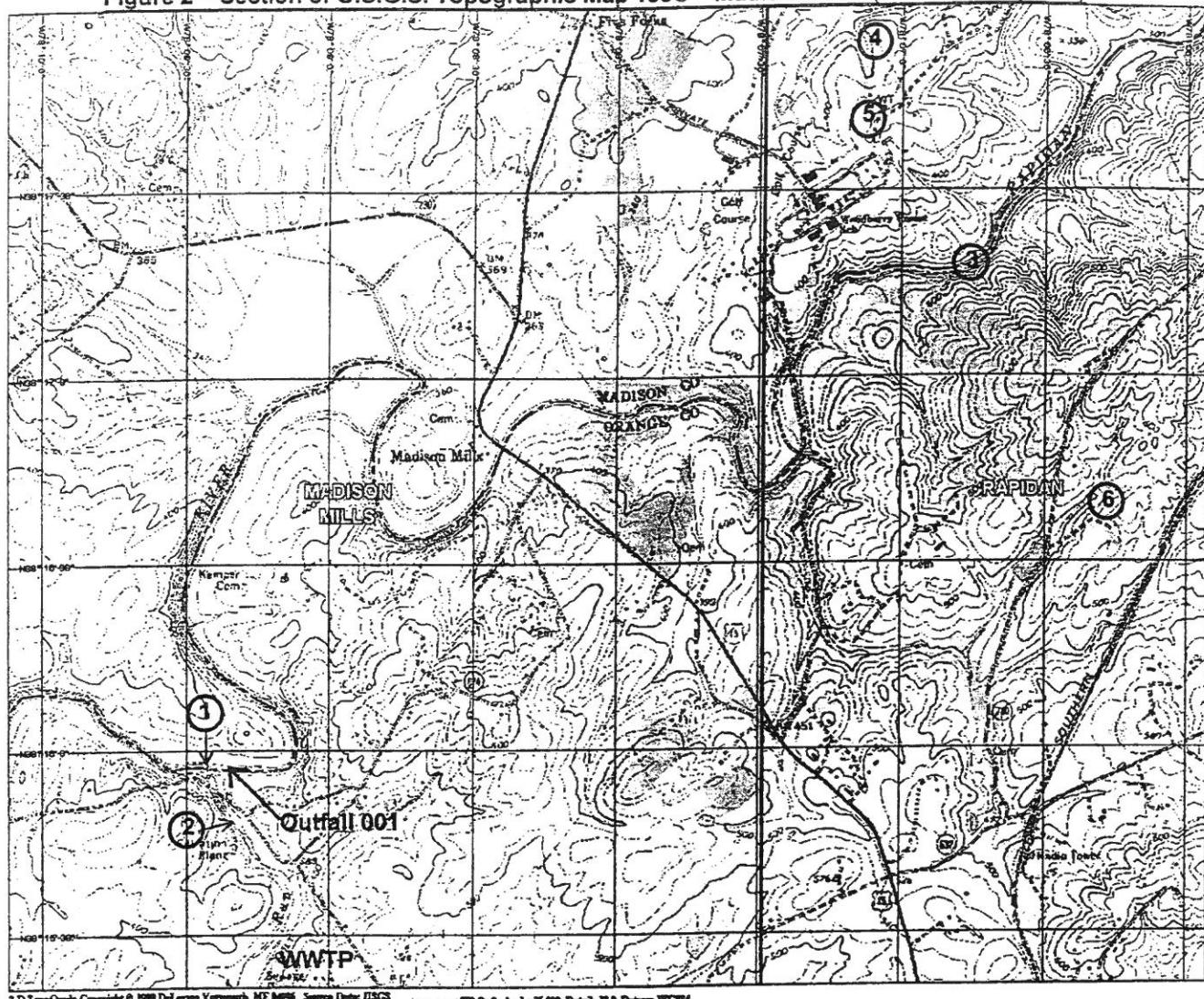
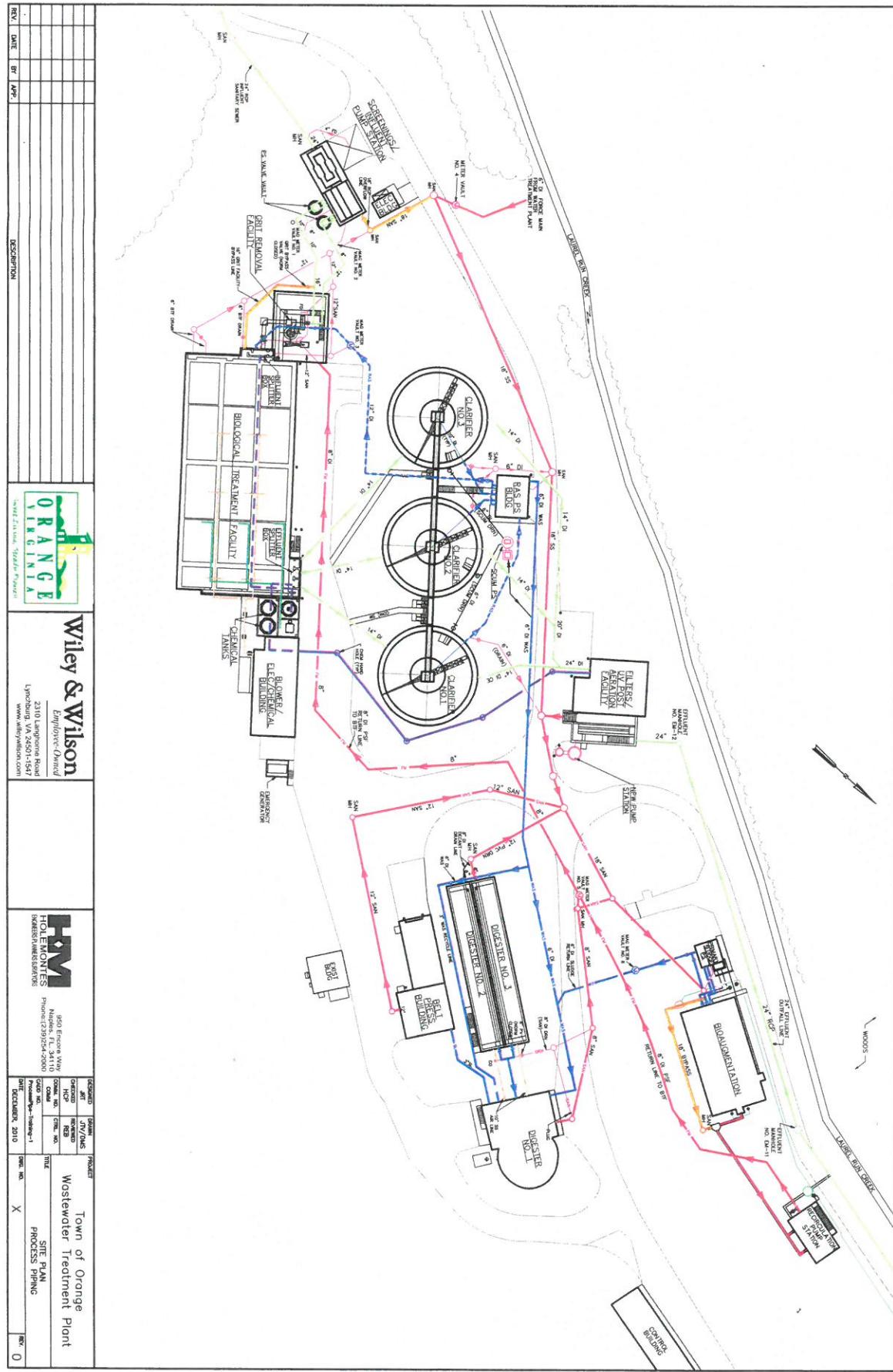
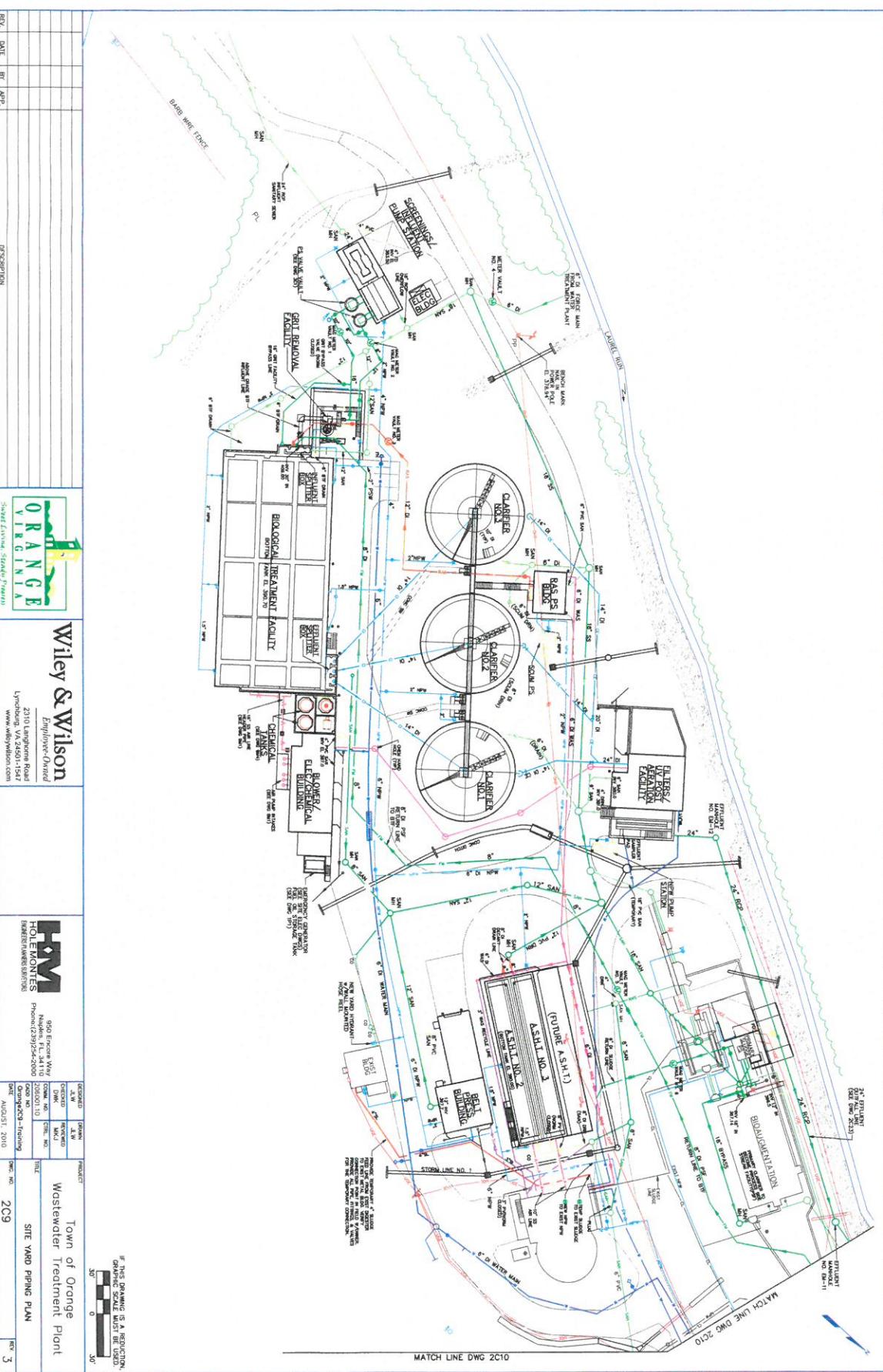


Table II – Significant Dischargers, Intakes, and Other Items of Interest

ID No.	Description
-	The closest known potable water intake is ~36.1 miles downstream from Outfall 001, at the Rapidan Service Authority's Wilderness Water Treatment Plant.
1	Intake for the Town of Orange WTP. According to the most recent annual report filed under VWUDS No. 480, the WTP treats 409 MGY, ~1.12 MGD.
2	Outfall 001 for the Town of Orange Water Treatment Plant (UT, Poplar Run).
3 & 4	Outfalls 001 and 002 (treated WWTP effluent) and 002 (treated WTP effluent) from the Woodberry Forest School.
5	Water withdrawal wells (#6 & #7) for the Woodberry Forest School, ~18.6 MGY.
6	Private residence (Gentry, VAG406039) treated sewage discharge.







IF THIS DRAWING IS A REDUCTION,
GRAPHIC SCALE MUST BE USED.

FACILITY NAME AND PERMIT NUMBER:
Town of Orange WWTP - VA0021385

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- c. If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

- d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule <u>MM / DD / YYYY</u>	Actual Completion <u>MM / DD / YYYY</u>
- Begin construction	<u> / / </u>	<u> / / </u>
- End construction	<u> / / </u>	<u> / / </u>
- Begin discharge	<u> / / </u>	<u> / / </u>
- Attain operational level	<u> / / </u>	<u> / / </u>

- e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? Yes No
Describe briefly: _____

B.6. EFFLUENT TESTING DATA (GREATER THAN 0.1 MGD ONLY).

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 001

Data enclosed

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.							
AMMONIA (as N)	1.36	mg/L	0.45	mg/L	3	SM 4500-NH3D	
CHLORINE (TOTAL RESIDUAL, TRC)	0.00	mg/L	0.00	mg/L	3	SM 4500-CI G	
DISSOLVED OXYGEN	9.2	mg/L	8.8	mg/L	3	ASTM DA888-09	
TOTAL KJELDAHL NITROGEN (TKN)	3.84	mg/L	1.77	mg/L	3	SM 4500 NH3C	
NITRATE PLUS NITRITE NITROGEN	0.948	mg/L	0.691	mg/L	3	SM 4500 NO3F	
OIL and GREASE	BDL	mg/L	BDL	mg/L	3	EPA 1664A	
PHOSPHORUS (Total)	0.28	mg/L	0.173	mg/L	3	SM4500-PE2011	
TOTAL DISSOLVED SOLIDS (TDS)	273	mg/L	261	mg/L	3	SM2540 C-2011	
OTHER							

END OF PART B.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:

Town of Orange WWTP - VA0021385

Form Approved 1/14/99
OMB Number 2040-0086**BASIC APPLICATION INFORMATION****PART C. CERTIFICATION**

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Basic Application Information packet | Supplemental Application Information packet: |
| | <input checked="" type="checkbox"/> Part D (Expanded Effluent Testing Data) |
| | <input checked="" type="checkbox"/> Part E (Toxicity Testing: Biomonitoring Data) |
| | <input checked="" type="checkbox"/> Part F (Industrial User Discharges and RCRA/CERCLA Wastes) |
| | <input type="checkbox"/> Part G (Combined Sewer Systems) |

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title Gregory S. Woods, Town ManagerSignature Gregory S. WoodsTelephone number (540) 672-5005Date signed 1/14/16

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

FACILITY NAME AND PERMIT NUMBER:

Town of Orange WWTP - VA0021385

Form Approved 1/14/99
OMB Number 2040-0086**SUPPLEMENTAL APPLICATION INFORMATION****PART D. EXPANDED EFFLUENT TESTING DATA**

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: 001

Data enclosed

(Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE				ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units		

METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.

ANTIMONY	0.408	ug/L			0.278	ug/L			3	EPA 200.8
ARSENIC	BDL	ug/L			BDL	ug/L			3	EPA 200.8
BERYLLIUM	BDL	ug/L			BDL	ug/L			3	EPA 200.8
CADMIUM	BDL	ug/L			BDL	ug/L			3	EPA 200.8
CHROMIUM	BDL	ug/L			BDL	ug/L			3	EPA 200.8
COPPER	4.29	ug/L			2.64	ug/L			3	EPA 200.8
LEAD	0.297	ug/L			0.219	ug/L			3	EPA 200.8
MERCURY	.0059	ug/L			.0028	ug/L			3	EPA 200.8
NICKEL	2.61	ug/L			2.20	ug/L			3	EPA 200.8
SELENIUM	BDL	ug/L			BDL	ug/L			3	EPA 200.8
SILVER	BDL	ug/L			BDL	ug/L			3	EPA 200.8
THALLIUM	BDL	ug/L			BDL	ug/L			3	EPA 200.8
ZINC	61.6	ug/L			44.7	ug/L			3	EPA 200.8
CYANIDE	BDL	ug/L			BDL	ug/L			3	EPA 335.4
TOTAL PHENOLIC COMPOUNDS	BDL	ug/L			BDL	ug/L			3	EPA 420.4
HARDNESS (AS CaCO ₃)	160	mg/L			143	mg/L			3	EPA 200.7

Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.

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POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE				ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples	
VOLATILE ORGANIC COMPOUNDS.										
ACROLEIN	BDL	mg/l			BDL	mg/l			3	EPA 624
ACRYLONITRILE	BDL	mg/l			BDL	mg/l			3	EPA 624
BENZENE	BDL	mg/l			BDL	mg/l			3	EPA 624
BROMOFORM	BDL	mg/l			BDL	mg/l			3	EPA 624
CARBON TETRACHLORIDE	BDL	mg/l			BDL	mg/l			3	EPA 624
CLOROBENZENE	BDL	mg/l			BDL	mg/l			3	EPA 624
CHLORODIBROMO-METHANE	BDL	mg/l			BDL	mg/l			3	EPA 624
CHLOROETHANE	BDL	mg/l			BDL	mg/l			3	EPA 624
2-CHLORO-ETHYL VINYL ETHER	BDL	mg/l			BDL	mg/l			3	EPA 624
CHLOROFORM	BDL	mg/l			BDL	mg/l			3	EPA 624
DICHLOROBROMO-METHANE	BDL	mg/l			BDL	mg/l			3	EPA 624
1,1-DICHLOROETHANE	BDL	mg/l			BDL	mg/l			3	EPA 624
1,2-DICHLOROETHANE	BDL	mg/l			BDL	mg/l			3	EPA 624
TRANS-1,2-DICHLORO-ETHYLENE	BDL	mg/l			BDL	mg/l			3	EPA 624
1,1-DICHLOROETHYLENE	BDL	mg/l			BDL	mg/l			3	EPA 624
1,2-DICHLOROPROPANE	BDL	mg/l			BDL	mg/l			3	EPA 624
1,3-DICHLORO-PROPYLENE	BDL	mg/l			BDL	mg/l			3	EPA 624
ETHYLBENZENE	BDL	mg/l			BDL	mg/l			3	EPA 624
METHYL BROMIDE	BDL	mg/l			BDL	mg/l			3	EPA 624
METHYL CHLORIDE	BDL	mg/l			BDL	mg/l			3	EPA 624
METHYLENE CHLORIDE	BDL	mg/l			BDL	mg/l			3	EPA 624
1,1,2,2-TETRACHLORO-ETHANE	BDL	mg/l			BDL	mg/l			3	EPA 624
TETRACHLORO-ETHYLENE	BDL	mg/l			BDL	mg/l			3	EPA 624
TOLUENE	BDL	mg/l			BDL	mg/l			3	EPA 624

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POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
1,1,1-TRICHLOROETHANE	BDL	mg/l			BDL	mg/l			3	EPA 624	
1,1,2-TRICHLOROETHANE	BDL	mg/l			BDL	mg/l			3	EPA 624	
TRICLORETHYLENE	BDL	mg/l			BDL	mg/l			3	EPA 624	
VINYL CHLORIDE	BDL	mg/l			BDL	mg/l			3	EPA 624	

Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.

ACID-EXTRACTABLE COMPOUNDS

P-CHLORO-M-CRESOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
2-CHLOROPHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
2,4-DICHLOROPHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
2,4-DIMETHYLPHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
4,6-DINITRO-O-CRESOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
2,4-DINITROPHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
2-NITROPHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
4-NITROPHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
PENTACHLOROPHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
PHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	
2,4,6-TRICHLOROPHENOL	BDL	mg/l			BDL	mg/l			3	EPA 625	

Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.

BASE-NEUTRAL COMPOUNDS.

ACENAPHTHENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
ACENAPHTHYLENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
ANTHRACENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
BENZIDINE	BDL	mg/l			BDL	mg/l			3	EPA 625	
BENZO(A)ANTHRACENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
BENZO(A)PYRENE	BDL	mg/l			BDL	mg/l			3	EPA 625	

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POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
3,4 BENZO-FLUORANTHENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
BENZO(GHI)PERYLENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
BENZO(K)FLUORANTHENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
BIS (2-CHLOROETHOXY) METHANE	BDL	mg/l			BDL	mg/l			3	EPA 625	
BIS (2-CHLOROETHYL)-ETHER	BDL	mg/l			BDL	mg/l			3	EPA 625	
BIS (2-CHLOROISO-PROPYL) ETHER	BDL	mg/l			BDL	mg/l			3	EPA 625	
BIS (2-ETHYLHEXYL) PHTHALATE	BDL	mg/l			BDL	mg/l			3	EPA 625	
4-BROMOPHENYL PHENYL ETHER	BDL	mg/l			BDL	mg/l			3	EPA 625	
BUTYL BENZYL PHTHALATE	BDL	mg/l			BDL	mg/l			3	EPA 625	
2-CHLORONAPHTHALENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
4-CHLOROPHENYL PHENYL ETHER	BDL	mg/l			BDL	mg/l			3	EPA 625	
CHRYSENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
DI-N-BUTYL PHTHALATE	BDL	mg/l			BDL	mg/l			3	EPA 625	
DI-N-OCTYL PHTHALATE	BDL	mg/l			BDL	mg/l			3	EPA 625	
DIBENZO(A,H) ANTHRACENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
1,2-DICHLOROBENZENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
1,3-DICHLOROBENZENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
1,4-DICHLOROBENZENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
3,3-DICHLOROBENZIDINE	BDL	mg/l			BDL	mg/l			3	EPA 625	
DIETHYL PHTHALATE	BDL	mg/l			BDL	mg/l			3	EPA 625	
DIMETHYL PHTHALATE	BDL	mg/l			BDL	mg/l			3	EPA 625	
2,4-DINITROTOLUENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
2,6-DINITROTOLUENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
1,2-DIPHENYLHYDRAZINE	BDL	mg/l			BDL	mg/l			3	EPA 625	

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POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
FLUORANTHENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
FLUORENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
HEXACHLOROBENZENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
HEXACHLOROBUTADIENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
HEXACHLOROCYCLO-PENTADIENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
HEXACHLOROETHANE	BDL	mg/l			BDL	mg/l			3	EPA 625	
INDENO(1,2,3-CD)PYRENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
ISOPHORONE	BDL	mg/l			BDL	mg/l			3	EPA 625	
NAPHTHALENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
NITROBENZENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
N-NITROSODI-N-PROPYLAMINE	BDL	mg/l			BDL	mg/l			3	EPA 625	
N-NITROSODI-METHYLAMINE	BDL	mg/l			BDL	mg/l			3	EPA 625	
N-NITROSODI-PHENYLAMINE	BDL	mg/l			BDL	mg/l			3	EPA 625	
PHENANTHRENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
PYRENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
1,2,4-TRICHLOROBENZENE	BDL	mg/l			BDL	mg/l			3	EPA 625	
Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.											
Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.											
END OF PART D. REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE											

SUPPLEMENTAL APPLICATION INFORMATION**PART E. TOXICITY TESTING DATA**

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

E.1. Required Tests. Data on File at DEQ

2012	2013	2014	2015
Feb	March	January	November
JUNE	April		
AUGUST	July		
Dec			

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

chronic acute

E.2. Individual Test Data. Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

Test number: _____ Test number: _____ Test number: _____

a. Test information.

Test species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			

b. Give toxicity test methods followed.

Manual title			
Edition number and year of publication			
Page number(s)			

c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.

24-Hour composite			
Grab			

d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)

Before disinfection			
After disinfection			
After dechlorination			

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Test number: _____

Test number: _____

Test number: _____

e. Describe the point in the treatment process at which the sample was collected.

Sample was collected:

f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.

Chronic toxicity

Acute toxicity

g. Provide the type of test performed.

Static

Static-renewal

Flow-through

h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.

Laboratory water

Receiving water

i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.

Fresh water

Salt water

j. Give the percentage effluent used for all concentrations in the test series.

k. Parameters measured during the test. (State whether parameter meets test method specifications)

pH

Salinity

Temperature

Ammonia

Dissolved oxygen

l. Test Results.

Acute:

Percent survival in 100% effluent

%

%

%

LC₅₀

%

%

%

95% C.I.

%

%

%

Control percent survival

%

%

%

Other (describe)

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Chronic:

NOEC	%	%	%
IC ₂₅	%	%	%
Control percent survival	%	%	%
Other (describe)			

m. Quality Control/Quality Assurance.

Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (describe)			

E.3. Toxicity Reduction Evaluation. Is the treatment works involved in a Toxicity Reduction Evaluation? Yes NoIf yes, describe: _____

_____**E.4. Summary of Submitted Biomonitoring Test Information.** If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: _____ (MM/DD/YYYY)

Summary of results: (see instructions)

_____**END OF PART E.****REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.**

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SUPPLEMENTAL APPLICATION INFORMATION

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.

GENERAL INFORMATION:

F.1. Pretreatment Program. Does the treatment works have, or is it subject to, an approved pretreatment program?

Yes No *Inactive at this time.*

F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.

- a. Number of non-categorical SIUs. 0
b. Number of CIUs. 0

SIGNIFICANT INDUSTRIAL USER INFORMATION:

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: _____

Mailing Address: _____

F.4. Industrial Processes. Describe all of the industrial processes that affect or contribute to the SIU's discharge.

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): _____

Raw material(s): _____

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (continuous or intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (continuous or intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

- a. Local limits Yes No
b. Categorical pretreatment standards Yes No

If subject to categorical pretreatment standards, which category and subcategory?

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F.8. Problems at the Treatment Works Attributed to Waste Discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

Yes No If yes, describe each episode.

RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:

F.9. RCRA Waste. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail, or dedicated pipe? Yes No (go to F.12.)

F.10. Waste Transport. Method by which RCRA waste is received (check all that apply):

Truck Rail Dedicated Pipe

F.11. Waste Description. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA Hazardous Waste Number	Amount	Units
----------------------------	--------	-------

CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:

F.12. Remediation Waste. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

Yes (complete F.13 through F.15.) No

Provide a list of sites and the requested information (F.13 - F.15) for each current and future site.

F.13. Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

F.14. Pollutants. List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary).

F.15. Waste Treatment.

a. Is this waste treated (or will it be treated) prior to entering the treatment works?

Yes No

If yes, describe the treatment (provide information about the removal efficiency):

b. Is the discharge (or will the discharge be) continuous or intermittent?

Continuous Intermittent If intermittent, describe discharge schedule.

END OF PART F.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

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SUPPLEMENTAL APPLICATION INFORMATION

PART G. COMBINED SEWER SYSTEMS

If the treatment works has a combined sewer system, complete Part G.

N/A

G.1. System Map. Provide a map indicating the following: (may be included with Basic Application Information)

- a. All CSO discharge points.
- b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).
- c. Waters that support threatened and endangered species potentially affected by CSOs.

G.2. System Diagram. Provide a diagram, either in the map provided in G.1. or on a separate drawing, of the combined sewer collection system that includes the following information:

- a. Locations of major sewer trunk lines, both combined and separate sanitary.
- b. Locations of points where separate sanitary sewers feed into the combined sewer system.
- c. Locations of in-line and off-line storage structures.
- d. Locations of flow-regulating devices.
- e. Locations of pump stations.

CSO OUTFALLS:

Complete questions G.3 through G.6 once for each CSO discharge point.

G.3. Description of Outfall.

a. Outfall number _____

b. Location _____
(City or town, if applicable) _____ (Zip Code) _____

_____ (County) _____ (State)

_____ (Latitude) _____ (Longitude)

c. Distance from shore (if applicable) _____ ft.

d. Depth below surface (if applicable) _____ ft.

e. Which of the following were monitored during the last year for this CSO?

Rainfall CSO pollutant concentrations CSO frequency

CSO flow volume Receiving water quality

f. How many storm events were monitored during the last year? _____

G.4. CSO Events.

a. Give the number of CSO events in the last year.

_____ events (actual or approx.)

b. Give the average duration per CSO event.

_____ hours (actual or approx.)

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- c. Give the average volume per CSO event.
_____ million gallons (____ actual or ____ approx.)
- d. Give the minimum rainfall that caused a CSO event in the last year.
_____ inches of rainfall

G.5. Description of Receiving Waters.

- a. Name of receiving water: _____
- b. Name of watershed/river/stream system: _____
United States Soil Conservation Service 14-digit watershed code (if known): _____
- c. Name of State Management/River Basin: _____
United States Geological Survey 8-digit hydrologic cataloging unit code (if known): _____

G.6. CSO Operations.

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

END OF PART G.

REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

Additional information, if provided, will appear on the following pages.

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2015 - Influent Flow Data, MGD

Date	January	February	March	April	May	June	July	August	September	October	November	December
1	0.6974	0.7864	0.6802	0.9244	1.0193	1.1683	1.2241	0.7266	0.8623			
2	0.6915	0.8210	0.8394	0.8753	0.9292	1.5661	0.9896	0.7116	0.6353			
3	0.7247	0.9272	1.0260	0.9398	0.9776	0.9222	0.9135	0.6985	0.7164			
4	0.8421	0.9540	1.0451	0.9346	1.1173	1.0824	0.8621	0.6741	0.6246			
5	0.8519	0.9550	1.6726	0.8209	1.0619	1.1198	0.8735	0.7756	0.6171			
6	0.8640	0.7143	1.2986	0.6915	1.1367	0.9473	1.0733	0.7213	0.5684			
7	0.8651	0.7876	1.2591	1.0050	1.0362	0.8911	1.1270	0.8339	0.6258			
8	0.8282	0.8152	1.3474	1.0775	0.9418	0.9800	0.9028	0.7073	0.5649			
9	0.6761	0.9206	1.3061	1.0748	0.9793	0.9079	0.7957	0.7708	0.6578			
10	0.6539	0.7093	1.2043	0.9907	0.9853	1.4130	0.7864	0.7832	0.6949			
11	0.6643	0.7548	1.2682	0.9008	1.1694	0.8038	1.3309	0.6737	0.6364			
12	0.9360	0.6802	1.2357	0.9953	0.9923	0.7974	0.9851	0.7202	0.7362			
13	0.9570	0.6681	1.0757	0.9519	0.9602	0.8037	0.9768	0.6858	0.7011			
14	0.8142	0.7206	1.0633	1.4959	0.8534	0.7980	0.8954	0.6514	0.6385			
15	0.8318	0.6783	1.0415	1.2757	0.8481	0.9661	0.9971	0.6798	0.6045			
16	0.7457	0.6481	1.0608	1.1242	0.9225	0.8326	0.8871	0.6823	0.6593			
17	0.7341	0.6244	0.9764	1.1109	0.9896	0.7858	0.8804	0.6745	0.5763			
18	0.7138	0.7070	0.8508	1.0491	1.0389	0.8456	0.7971	0.7485	0.6522			
19	0.7256	0.6765	0.9938	1.0872	0.8706	0.7422	0.8267	0.6978	0.5745			
20	0.6748	0.6848	1.1668	2.8174	0.9038	0.9137	0.8877	0.6949	0.5566			
21	0.7390	0.6619	1.0187	1.5764	0.9108	1.0206	0.8243	0.5961	0.6625			
22	0.6410	0.8859	0.9332	1.3941	0.6721	0.9365	0.8102	0.5739	0.9573			
23	0.7416	0.9393	1.0114	1.3457	0.6156	0.8470	0.7454	0.6124	0.6539			
24	1.2735	0.8385	0.9243	1.1197	0.6798	0.8986	0.7936	0.6972	0.7130			
25	0.9171	0.9296	0.8281	1.2151	0.7335	0.8313	0.6949	0.5927	0.5705			
26	1.0491	0.8102	0.8858	1.2836	0.7747	0.9283	0.7417	0.6523	0.6391			
27	0.9827	0.9037	1.6265	1.1349	1.0735	2.0299	0.8360	0.6509	0.6733			
28	0.9103	0.6822	1.1386	1.0707	0.9135	1.3478	0.9772	0.6171	0.6508			
29	0.8906	1.0258	1.0515	0.8555	1.5588	0.9249	0.6165	1.3089				
30	0.8593	1.1263	1.0622	0.7816	0.9387	0.8175	0.6312	1.1646				
31	0.8492	1.2437		0.9689	0.7756	0.7490						

Average Daily Flow, MGD (Oct. 2014 - Sept. 2015)
Maximum Daily Flow, MGD (Oct. 2014 - Sept. 2015)

0.8560
2.8174

3 Year Average (Oct. 2012 - Sept. 2015)

0.9983
MGD

Town of Orange WWTP, VA0021385
2014 - Influent Flow Data, MGD

Date	January	February	March	April	May	June	July	August	September	October	November	December
1	1.1977	0.9254	1.1344	2.0551	3.9997	1.1499	0.8280	0.6398	0.5698	0.8325	0.5911	0.6648
2	1.1917	0.9376	1.1853	1.4985	2.5634	1.1164	0.9153	0.6821	0.4819	0.6275	0.5916	0.9334
3	1.1123	2.0601	1.3654	1.4718	1.7311	1.1428	1.4925	0.6794	0.5245	0.6256	0.8401	0.9229
4	1.0393	1.6233	1.2793	1.4144	1.6157	1.1137	1.0280	0.6527	0.4543	0.8277	0.7006	0.7768
5	1.1916	1.5257	1.3109	1.3405	1.4746	1.1261	0.8478	0.6644	0.5137	0.6163	0.7205	0.6985
6	1.3488	1.3307	1.3250	1.3391	1.5093	1.0222	0.9330	0.8230	0.4556	0.6643	0.6256	0.7993
7	1.2135	1.2159	1.2953	1.6214	1.5302	1.0531	0.8414	0.6164	0.4068	0.7277	0.6297	0.8291
8	1.1000	1.1590	1.3637	1.5035	1.4383	1.0304	0.8825	0.6704	0.4855	0.8733	0.6449	0.7214
9	1.0494	1.1762	1.3390	1.3844	1.2847	1.1060	0.8492	0.6233	0.4890	0.6862	0.5933	1.0283
10	1.3661	1.1048	1.3253	1.3717	1.2594	1.1112	0.7719	0.6386	0.7065	0.6270	0.5650	0.8211
11	2.2382	1.0984	1.2480	1.3442	1.2697	1.2778	0.7330	0.7485	0.4584	0.6450	0.6155	0.7400
12	1.7903	1.0332	1.3703	1.3251	1.6916	1.4082	0.7454	1.0349	0.5182	0.5838	0.5798	0.6145
13	1.4858	1.0623	1.2195	1.3654	1.2321	1.4760	0.8098	0.9223	0.5485	0.6128	0.6004	0.5614
14	1.5053	1.2125	1.1467	1.1746	1.3091	1.4118	0.8884	0.6814	0.5628	0.8557	0.5060	0.5730
15	1.4679	1.4500	1.1295	2.8330	1.5424	1.1153	0.8269	0.6600	0.5490	1.5604	0.5647	0.7167
16	1.5312	1.3603	1.1393	2.4891	4.3765	1.1691	0.7698	0.6611	0.5514	0.9113	0.5242	0.6997
17	1.3717	1.3026	1.2503	1.6534	2.0880	1.1246	0.6525	0.6782	0.8962	0.7881	0.7559	0.7557
18	1.2705	1.4978	1.3642	1.3317	1.6397	1.1669	0.6893	0.8296	0.5741	0.7288	0.6057	0.7207
19	1.2047	1.8658	1.5102	1.2486	1.6290	1.3244	0.6637	0.6265	0.6417	0.6986	0.6067	0.6537
20	1.1823	1.8266	1.6112	1.1856	1.4368	1.1679	0.9640	0.8199	0.5635	0.7303	0.6238	0.6242
21	1.2351	1.7180	1.3689	1.1550	1.4577	1.1407	0.8406	0.7088	0.6023	0.7226	0.5324	0.6657
22	1.1981	1.5771	1.3122	1.1459	1.5751	0.9541	0.7418	0.6703	0.5214	0.8013	0.5447	0.7184
23	1.0612	1.4661	1.3375	1.1068	1.4871	0.8650	0.8155	0.6625	0.5881	0.6881	0.5626	0.7648
24	1.1682	1.6878	1.2317	1.0959	1.2368	0.9118	0.7124	0.6466	0.6057	0.6512	0.9946	1.4914
25	1.0936	1.2653	1.3112	1.2322	1.2264	0.8642	0.6966	0.6601	0.7445	0.6470	0.6465	1.0065
26	1.0091	1.2475	1.3072	1.1497	1.3279	0.8744	0.6898	0.6367	1.1471	0.6607	1.2996	0.8595
27	1.0492	1.2625	1.2983	1.0463	1.2546	0.8187	0.8442	0.6316	0.5169	0.7268	0.8945	0.8127
28	1.1298	1.1488	1.3308	1.1363	1.9697	0.8079	0.9252	0.5215	0.5880	0.7010	0.6935	0.7652
29	0.9383	1.5483	1.3306	1.3779	0.7712	0.6741	0.4015	0.6816	0.6878	0.6457	0.8549	
30	1.1040	2.8579	4.0959	1.2049	0.8231	0.7632	0.4397	0.5799	0.6722	0.6936	0.7923	
31	0.9997	1.4722	1.1132	0.6748	0.4537	0.4537	0.6171	0.7569				

Average Daily Flow, MGD (Oct. 2013 - Sept. 2014)
Maximum Daily Flow, MGD (Oct. 2014 - Sept. 2014)

1.0962
4.3765

Town of Orange WWTP, VA0021385
2013 - Influent Flow Data, MGD

Date	January	February	March	April	May	June	July	August	September	October	November	December
1	0.7264	1.4000	0.9990	1.1619	0.9456	0.9598	1.2583	1.2396	0.9721	0.8424	0.9026	0.7790
2	0.7468	1.0741	0.9735	1.0127	0.8843	1.0230	1.2864	1.0906	1.0742	0.8524	0.7940	0.8532
3	0.7544	1.0422	1.0511	0.9895	0.9361	1.2702	2.1409	0.9114	1.0654	0.9175	0.6793	0.7754
4	0.7252	0.9838	1.0249	1.0296	0.9457	1.0917	1.4317	0.8610	1.0709	0.7331	0.6941	0.8481
5	0.7020	0.9303	0.8881	1.1745	0.8843	1.0333	1.3445	0.8639	0.9066	0.6848	0.7471	0.8383
6	0.6865	0.9806	1.1518	1.0250	0.9916	1.4367	1.1560	0.8965	0.9182	0.7021	0.7440	0.9728
7	0.7324	0.8698	1.5352	1.0519	2.5385	2.8621	1.3117	0.8926	0.9059	0.8767	0.9786	1.3991
8	0.6786	0.9566	1.6231	1.0271	2.4736	1.7051	1.4331	0.8685	0.9634	0.7975	0.7120	1.0609
9	0.7391	0.8862	1.6850	1.1252	1.8458	1.5669	1.3058	0.8629	1.3050	0.8992	0.6524	1.8718
10	0.7245	0.8638	1.6270	1.2863	1.4557	3.0438	1.2917	1.2238	1.0005	1.3847	0.6636	1.7503
11	0.6890	1.1007	1.4649	0.9441	1.3436	2.0685	1.3121	1.0612	0.9939	1.2954	0.7857	1.3972
12	0.6870	0.9816	2.4071	1.2683	1.1716	1.6627	1.8512	1.0270	0.9614	1.2195	0.7258	1.3432
13	0.7163	0.9448	1.7790	1.0252	1.1602	1.5337	1.3997	1.3754	0.5868	1.3218	0.7437	1.0683
14	0.7199	0.8292	1.4405	0.9853	1.2114	1.3183	1.3039	0.9039	0.7709	1.1232	0.7111	1.0718
15	1.1051	0.8621	1.3300	1.0137	1.0640	1.2504	1.3442	0.8080	0.7383	1.0126	0.6281	1.1317
16	1.6356	0.8292	1.2473	1.0200	1.1154	1.2128	1.2182	0.8072	0.7579	0.9284	0.8044	1.0541
17	1.1817	0.8344	1.1638	0.9598	1.0746	1.4187	1.2544	0.8115	0.7125	0.9755	0.6759	1.0057
18	1.1267	0.8048	1.4412	1.0070	1.0522	1.7451	1.3461	1.6382	0.7897	0.8298	0.7838	0.9898
19	0.9793	0.8889	1.4506	1.1149	1.1053	1.1310	1.1956	1.3539	0.7923	0.7545	0.6380	1.0706
20	0.8991	0.8736	1.2691	1.0984	1.2839	1.2818	1.1651	1.0859	0.7458	0.7235	0.6783	1.0051
21	0.8834	0.7894	1.3979	0.9595	1.1414	1.0875	1.1609	1.6554	0.8016	0.9318	0.6848	0.9056
22	0.8051	0.7563	1.1631	0.9740	1.0983	1.1385	1.0967	1.1792	0.8167	0.8226	0.6745	0.9394
23	0.7806	0.8275	1.1515	0.9599	1.2123	1.1770	1.1410	2.3997	0.7917	0.8856	0.6546	1.3359
24	0.7690	0.7921	1.1622	0.9403	1.0887	1.2520	1.1488	1.9171	0.8370	0.7403	0.5776	1.1830
25	0.7304	0.7936	1.3059	0.9422	0.9538	1.2421	1.0335	1.3948	0.8174	0.7664	0.5945	0.9509
26	0.8016	1.2343	1.3036	0.9240	0.9920	1.1989	0.8364	1.4417	0.7209	0.7058	1.0515	0.9825
27	0.7170	1.5407	1.2351	0.9176	0.9575	1.2796	1.0332	1.2374	0.9223	0.6894	2.0426	1.0030
28	0.8074	1.1597	1.1826	0.9137	1.0809	1.1900	0.9132	1.2181	0.7308	0.7313	1.0311	0.9084
29	0.7938	1.1303	1.0513	1.3341	1.1657	1.1053	1.1605	0.6853	0.7146	0.8598	2.5763	
30	1.0849	1.0878	0.9539	1.0733	1.1466	0.8514	1.1106	0.7506	0.7183	0.7828	1.7268	
31	2.5539	1.0637	1.0527	1.0596	0.9600	1.0596	0.7912	1.4153				

Average Daily Flow, MGD (Oct. 2012 - Sept. 2013)
Maximum Daily Flow, MGD (Oct. 2012 - Sept. 2013)

1.0426
3.0438

Town of Orange WWTP, VA0021385
2012 - Influent Flow Data, MGD

Date	January	February	March	April	May	June	July	August	September	October	November	December
1	0.8689	0.8062	1.2049	0.7294	0.7824	0.9730	0.7640	1.4956	0.6851	0.6842	1.1508	0.6554
2	0.8428	1.2277	1.0308	0.7208	0.7990	0.9471	0.7618	0.8421	0.6704	1.7555	0.8727	0.6448
3	0.8594	1.0552	1.1302	0.7980	0.8024	0.7372	0.6898	0.7714	0.6711	1.3533	0.8394	0.6601
4	0.8817	0.9594	1.0054	0.8245	0.8442	0.7772	0.6609	0.7023	0.7716	0.9257	0.8434	0.8457
5	0.8344	0.9396	1.0038	0.7294	0.8139	0.6909	0.6611	0.6907	0.7320	0.9484	0.7663	0.6756
6	0.8664	0.9975	0.9888	0.7401	0.7976	0.7547	0.6998	0.7219	0.8440	0.7530	0.6432	
7	0.7977	1.0125	0.9188	0.7146	0.7340	0.8249	0.6202	0.7090	0.8692	0.7451	0.9032	0.6377
8	0.7887	0.8017	0.4861	0.6688	0.6321	0.6933	0.6082	0.7493	0.7836	0.7469	0.8383	0.6284
9	0.7799	0.8201	0.7385	0.6939	0.9132	0.6702	0.6786	0.7392	0.7402	0.7776	0.8221	0.6253
10	0.8331	0.7383	0.9194	0.7710	0.8215	0.6606	0.6106	0.7658	0.7934	0.8332	0.7160	0.6882
11	1.0205	0.7793	0.8998	0.6679	0.6476	0.7191	0.6957	1.1356	0.7440	0.7108	0.7529	0.6791
12	1.5384	0.7296	0.8499	0.7132	0.6623	0.8814	0.6050	0.7879	0.7205	0.7070	0.7428	0.6489
13	1.1071	0.7703	0.8588	0.7014	0.6380	0.7808	0.5921	0.7168	0.6773	0.7082	0.9629	0.6367
14	0.9895	0.7701	0.8568	0.7093	0.9027	0.6995	0.6249	1.1920	0.6807	0.7288	0.7470	0.6219
15	0.8824	0.7573	0.8298	0.7216	1.4202	0.6812	0.7367	1.8860	0.7103	0.7100	0.7191	0.6075
16	0.8736	0.7617	0.8183	0.7675	0.8770	0.6294	0.7332	0.9820	0.6578	0.6999	0.7269	0.6551
17	0.9579	0.7816	0.8057	0.7028	0.8394	0.6357	0.6169	0.8529	0.6646	0.6400	0.6586	0.6550
18	0.8681	0.7144	0.7726	1.0106	0.7748	0.7697	0.4549	0.7847	1.2441	0.7166	0.8016	0.6653
19	0.8344	0.7398	0.8175	0.7164	0.6519	0.6962	0.7276	0.7954	0.8991	1.4638	0.7455	0.5932
20	0.7821	0.9227	0.8223	0.7074	0.6615	0.6663	0.5977	0.6868	0.7754	0.8851	0.6980	0.6832
21	0.9889	0.8696	0.8032	0.7665	0.7126	0.6646	1.0777	0.9216	0.7215	0.7645	0.6760	0.9832
22	0.8643	0.9723	0.7757	0.9068	0.7207	0.8441	0.6423	0.7430	0.6975	0.7561	0.6438	0.6885
23	0.9190	1.1005	0.7901	0.9660	0.7698	0.8005	0.6994	0.7116	0.6854	0.7454	0.6738	0.6277
24	0.9361	0.8427	0.8611	0.7911	0.7922	0.7285	0.8359	0.7466	0.6857	0.8166	0.6235	0.6533
25	0.8043	0.7212	0.9694	0.7291	0.7999	0.7299	0.7889	0.7402	0.6775	0.9124	0.6765	0.6591
26	0.8189	0.6986	0.8153	0.8836	0.6926	0.7314	0.6680	0.9952	0.6727	0.7313	0.6536	1.2095
27	0.9760	0.7467	0.7760	0.9059	0.6998	0.6710	0.7668	0.7393	0.6962	0.6795	0.6755	1.1707
28	0.8317	0.7716	0.8088	0.7089	0.6715	0.6053	0.6206	0.7541	0.8595	0.7043	0.6875	0.8830
29	0.8330	1.2015	0.8835	0.7183	0.8065	0.6762	0.6463	0.6833	0.8381	1.2631	0.6590	0.8290
30	0.8945	1.0131	0.7397	0.6447	0.8139	0.6339	0.7208	0.7025	1.9088	0.6320	0.7646	
31	0.7971		0.4319	0.9651	0.7409	1.6453					0.7942	

Town of Orange WWTP, Permit VA00213855

Summary of In-house Test Results

Town of Orange WWTP, Permit VA0021385
Summary of In-house Test Results

2015 Date	Temperature						Flow Data for 2A.12					
	Jan.	Feb	Mar	Jun.	Jul.	Aug	Jan.	Mar.	May	Jun.	Jul.	Sept
1	12.1	10.3	10.3	21.8	22.1	24.3	0.697	0.680	1.019	1.168	1.224	0.862
2	12.5	12.5	11.0	21.7	22.1	23.7	0.691	0.839	0.929	1.566	0.990	0.635
3	12.6	11.1	12.1	20.3	22.0	23.6	0.725	1.026	0.978	0.922	0.914	0.716
4	13.1	10.0	11.5	19.7	22.5	24.0	0.842	1.045	1.117	1.082	0.862	0.625
5	12.9	10.8	11.7	19.5	22.4	23.7	0.852	1.673	1.062	1.120	0.874	0.617
6	12.3	10.0	8.8	20.3	22.1	23.3	0.864	1.299	1.137	0.947	1.073	0.568
7	11.3	11.0	10.5	20.7	22.8	23.0	0.865	1.259	1.036	0.891	1.127	0.626
8	10.6	11.8	10.9	21.0	23.0	23.6	0.828	1.347	0.942	0.980	0.903	0.565
9	10.8	12.4	11.1	20.9	23.4	23.9	0.676	1.306	0.979	0.908	0.796	0.658
10	11.1	12.2	12.5	21.2	24.1	23.5	0.654	1.204	0.985	1.413	0.786	0.695
11	11.5	11.6	13.0	21.8	23.7	23.6	0.664	1.268	1.169	0.804	1.331	0.636
12	11.7	12.0	11.7	22.2	23.0	24.0	0.936	1.236	0.992	0.797	0.985	0.736
13	12.3	10.7	11.3	23.0	23.0	23.5	0.957	1.076	0.960	0.804	0.977	0.701
14	12.5	10.7	11.4	22.4	22.9	23.8	0.814	1.063	0.853	0.798	0.895	0.638
15	12.0	9.3	12.0	23.1	22.7	24.0	0.832	1.042	0.848	0.966	0.997	0.604
16	13.0	10.8	11.7	23.3	22.3	24.5	0.746	1.061	0.923	0.833	0.887	0.659
17	13.1	9.9	12.4	23.0	23.1	24.7	0.734	0.976	0.990	0.786	0.880	0.576
18	13.2	9.9	12.1	22.7	24.1	24.8	0.714	0.851	1.039	0.846	0.797	0.652
19	12.5	9.2	11.7	22.9	24.3	24.5	0.726	0.994	0.871	0.742	0.827	0.575
20	13.6	9.2	11.5	22.6	24.7	24.1	0.675	1.167	0.904	0.914	0.888	0.557
21	13.5	8.5	11.6	23.3	25.0	24.6	0.739	1.019	0.911	1.021	0.824	0.662
22	13.3	10.5	11.9	23.4	24.5	23.9	0.641	0.933	0.672	0.937	0.810	0.957
23	12.9	11.9	12.2	24.0	24.5	23.2	0.742	1.011	0.616	0.847	0.745	0.654
24	13.1	10.1	12.3	24.0	24.1	23.4	1.274	0.924	0.680	0.899	0.794	0.713
25	13.1	10.7	12.5	24.3	23.9	23.5	0.917	0.828	0.734	0.831	0.695	0.570
26	12.4	11.2	13.3	23.5	24.3	23.3	1.049	0.886	0.775	0.928	0.742	0.639
27	12.9	11.2	13.0	22.7	24.1	23.0	0.983	1.626	1.073	2.030	0.836	0.673
28	11.5	9.9	11.6	22.2	24.3	23.7	0.910	1.139	0.913	1.348	0.977	0.651
29	11.1		11.4	22.0	24.0	24.0	0.891	1.026	0.856	1.559	0.925	1.309
30	11.7		12.2	22.3	24.2	24.2	0.859	1.126	0.782	0.939	0.817	1.165
31	10.1		12.5		24.1	24.0	0.849	1.244	0.969	0.776		
Min		8.50		19.50						0.557		
Max		13.60		25.00						2.030		
Avg.		11.59		23.17						0.911		

Town of Orange WWTP, VA0021385

7-Day Metal Testing Results

Date	Inf. Flow, MGD	Influent			Effluent		
		Cu, ug/L	Zn, ug/L	Hardness, mg/L	Cu, ug/L	Zn, ug/L	Hardness, mg/L
11/02/15	0.657	25.0	106	48	BDL	34	128
11/03/15	0.622	46.0	211	64	BDL	34	120
11/04/15	0.607	22.0	75	72	BDL	33	112
11/05/15	0.595	29.0	103	56	5.0	54	168
11/06/15	0.572	28.0	100	64	BDL	36	168
11/07/15	0.591	31.0	105	64	BDL	35	168
11/08/15	0.563	23.0	94	64	BDL	47	152

Chlorine mg/L			In-house
07/14/14	0.0	mg/L	
06/03/15	0.0	mg/L	
09/08/15	0.0	mg/L	
Max	0.000	mg/L	
Avg	0.000	mg/L	

Data Results for Three Sample Events

Final Effluent - VA0021835

Date	Ammonia	DO	TKN	NO2 + NO3	TP	TDS	CaCO3	Units
07/14/14	0.00	9.20	0.57	0.948	0.28	266	156	mg/l
06/03/15	1.36	9.00	3.84	0.604	0.17	273	160	mg/l
09/08/15	0.00	8.10	0.90	0.522	0.07	245	114	mg/l
Max	1.36	9.20	3.84	0.948	0.28	273	160	mg/l
Avg	0.45	8.77	1.77	0.691	0.173	261	143	mg/l

NH3 < 0.1 mg/L results reported as 0 mg/L

Date	Antimony	Cu	Pb	Hg	Ni	Zn	Units
07/14/14	0.166	4.29	0.171	0.000935	2.11	61.6	ug/L
06/03/15	0.260	2.31	0.190	0.001530	1.88	23.2	ug/L
09/08/15	0.408	1.32	0.297	0.005900	2.61	49.4	ug/L
Max	0.408	4.29	0.297	0.005900	2.61	61.6	ug/L
Avg	0.278	2.64	0.219	0.002788	2.20	44.7	ug/L



July 14, 2014

Michelle Steinberger
Town of Orange WWTP
13222 Spicers Mill Road
Orange, VA 22960

Re: Outfall 001 Expanded Effluent Metal's Data

Dear Michelle:

Environmental Systems Service, Ltd. (ESS) is pleased to submit the results for clean metals sampling conducted on June 11, 2014. All samples were pumped grab samples. Metals were analyzed by Albion Environmental. Attachments include raw data for all metal's analyses.

Parameter	Reported Level (ppb)
Total Recoverable	
Antimony	0.166
Arsenic	<1.0
Beryllium	<0.50
Cadmium	<0.10
Chromium (T)	<1.00
Copper	4.29
Lead	0.171
Mercury	0.000935
Nickel	2.11
Selenium	<2.0
Silver	<0.10
Thallium	<0.10
Zinc	61.6

ESS appreciates the opportunity to provide clean sampling and analytical services. If you have any questions, please feel free to contact me at 540-825-6660.

Sincerely,
Angie Woodward
Angie Woodward
Technical Director

Attachments

ESS / Orange VA Clean Metals & Mercury Study
Final Total Recoverable Effluent Mercury Data for Samples Collected 6-11-2014
(Data Report T0704-9457-009)

Sample ID	Coll Date	Location	Sample Type	Matrix	Processing	Method	Anal. Date	Dil. Fac.	Hg (ppb)
Field Samples (Notes 1,2)									
TT-0633	6/11/2014 1330	Outfall 001 (Comp)	Pumped Grab	Effluent	Total Rec.	EPA 1631e	7/3/2014	1	0.000935
Notes:									
1. Mercury (Hg) concentration units are micrograms per liter (= parts per billion, ppb) and relate only to the samples listed. Samples were received in good condition from the sponsor (ESS, 218 North Main Street, Culpeper, VA 22701). Analyses performed at the 1703 Austin Ave., College Station, TX facility. This data report shall not be reproduced except in full, without the written approval of Albion Environmental (AE). The Hg data reported here meet all NELAP requirements under AE's Texas NELAP accreditation.									
Field Quality Assurance (QA) Samples									
Equipment Blanks									
SS-1679	10/10/2013	Albion Env.	Bottle Blank (125)	DIW	Total Rec.	EPA 1631e	10/17/2013	1	< 0.000020
SS-1928	8/8/2013	Albion Env.	Bottle Blank (250)	DIW	Total Rec.	EPA 1631e	8/20/2013	1	< 0.000020
MM-3912	8/24/2009	Albion Env.	Sampler Blank	DIW	Total Rec.	EPA 1631e	9/3/2010	1	< 0.000020
Field Blank									
TT-0630	6/11/2014 1320	Outfall 001 (Comp)	Pumped Grab Field Blank	DIW	Total Rec.	EPA 1631e	7/3/2014	1	< 0.000020
Field Duplicate									
No field duplicate samples were collected during this sampling event.									
Laboratory Quality Assurance Samples									
Reporting Limit (undiluted, ppb)									
EPA 1631e 0.00									
Method Detection Limit (undiluted, ppb)									
EPA 1631e 0.00									
Certified Reference Material									
TMA-989	Albion Env.	EPA Ref. Std.	Water	Total Rec.	EPA 1631e	7/3/2014	20220	212	
Certified Value							202		
% R							105		
Matrix Spike									
See Data Report P0107-9457-011 dated 1-7-2011 for matrix spike/MS duplicate analyses of the effluent matrix.									
Blank Spikes									
LCS-1	Albion Env.	Blank Spike	DIW	Total Rec.	EPA 1631e	7/3/2014	1	0.00214	
Expected							0.00200		
% R							107		
QCS5 NIST-1641d-1	Albion Env.	NIST Ind. Check Std.	DIW	Total Rec.	EPA 1631e	7/3/2014	1	0.00486	
Expected Value							0.00500		
% R							97		
QCS5 NIST-3133-1	Albion Env.	NIST Ind. Check Std.	DIW	Total Rec.	EPA 1631e	7/3/2014	1	0.00503	
Expected Value							0.00500		
% R							101		
Percent Recovery at Reporting Limit (ML, Low Calibration Standard)									
CalStd-1	Albion Env.	Calibration Std.	DIW	Total Rec.	EPA 1631e	7/3/2014	1	0.000487	
Reporting Limit (ML)							0.000500		
% R							97		
Method Blanks									
M-BLK-3	Albion Env.	Method Blank	DIW	Total Rec.	EPA 1631e	7/3/2014	1	< 0.000020	
M-BLK-4	Albion Env.	Method Blank	DIW	Total Rec.	EPA 1631e	7/3/2014	1	< 0.000020	
M-BLK-5	Albion Env.	Method Blank	DIW	Total Rec.	EPA 1631e	7/3/2014	1	< 0.000020	



218 North Main St. ♦ P.O. Box 520 ♦ Culpeper, Virginia 22701 ♦ Tel: (540) 825-6660 ♦ Fax (540) 825-4961 ♦ <www.ess-services.com>

Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 07/14/2014
Job #: 0007279
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location:

The test results submitted in this report relate only to the samples submitted and as received by Environmental Systems Service, Ltd (ESS).

ESS assumes no responsibility, express or implied, as to the interpretation of the analytical results contained in this report.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise noted.

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If you have received this report in error, please notify ESS immediately at (540) 825-6660.

A handwritten signature in black ink that reads "Angie Woodward".

Approved by: _____

A. Woodward/Technical Director

Reviewers Initials aw



VELAP Lab ID # 460019 VA DW Lab ID # 00115



Analytical Report

Orange, Town of - WWTP
 ATTN: Michelle Steinberger
 119 Bellevue Avenue
 Orange, VA 22960

Report Date: 07/14/2014
 Job #: 0007279
 Customer #: 0005706
 Customer PO #:
 Collected By: ESS Employee
 Sample Location:

Sample ID#:	0035812	Sample Source:	Effluent				
Sample Date/Time:	06/11/2014 / 14:05	Date Received:	06/11/2014				
Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
Total Cyanide	<0.0200	mg/l	0.0200	SM4500CNE-2011	06/23/2014	11:15	574
Phenols, Total	<0.02	mg/l	0.02	EPA 420.4	06/30/2014	12:16	013
HEM; Oil & Grease	<5.00	mg/l	5.00	EPA 1664A	06/19/2014	16:56	574
624 Volatiles							
Acrolein	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Acrylonitrile	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Benzene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Dichlorobromomethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Bromoform	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Bromomethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Carbon Tetrachloride	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Chlorobenzene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Chlorodibromomethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Chloroethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
2-Chloroethylvinylether	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Chloroform	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Chloromethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,2-Dichlorobenzene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,3-Dichlorobenzene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,4-Dichlorobenzene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,1-Dichloroethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,2-Dichloroethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,1-Dichloroethene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
trans-1,2-Dichloroethene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,2-Dichloropropane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
cis-1,3-Dichloropropene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
trans-1,3-Dichloropropene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Ethylbenzene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Methylene Chloride	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,1,2,2-Tetrachloroethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Tetrachloroethene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Toluene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,1,1-Trichloroethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
1,1,2-Trichloroethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Trichloroethene	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574
Trichlorofluoromethane	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574





Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 07/14/2014
Job #: 0007279
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location:

Sample ID#:	0035812	Sample Source:	Effluent
Sample Date/Time:	06/11/2014 / 14:05	Date Received:	06/11/2014

Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
Vinyl Chloride	<2.00	ug/l	2.00	EPA 624	06/19/2014	14:42	574

574 Samples subcontracted to VELAP ID# 460160
013 Samples subcontracted to VELAP ID# 460013





218 North Main St ◆ P.O. Box 520 ◆ Culpeper, Virginia 22701 ◆ Tel: (540) 825-6660 ◆ Fax (540) 825-4961 ◆ <www.ess-services.com>

Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 07/14/2014
Job #: 0007279
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Part D

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A handwritten signature in cursive ink that reads "Angie Woodward".

Approved by: _____

A. Woodward/Technical Director

Reviewers Initials AW



VELAP Lab ID # 460019 VA DW Lab ID # 00115



Analytical Report

Orange, Town of - WWTP
 ATTN: Michelle Steinberger
 119 Bellevue Avenue
 Orange, VA 22960

Report Date: 07/14/2014
 Job #: 0007279
 Customer #: 0005706
 Customer PO #:
 Collected By: ESS Employee
 Sample Location: Part D

Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
Ammonia, as N	<0.10	mg/l	0.10	SM 4500-NH3D-2011	06/14/2014	09:45	BW
Total Kjeldahl Nitrogen	0.57	mg/l	0.50	SM 4500 NH3C-2011	06/17/2014	13:17	ES
Nitrite + Nitrate	0.948	mg/l	0.0500	SM4500NO3F-2011	06/19/2014	10:00	574
Phosphorus, Total	0.28	mg/l	0.05	SM 4500-P E-2011	06/13/2014	11:57	ES
Total Dissolved Solids	266	mg/l	10.0	SM 2540 C-2011	06/17/2014	12:28	JL
Total Hardness as CaCO ₃	156	mg/l	0.0500	EPA 200.7	06/18/2014	07:50	574
625 Semi-Volatiles							
Acenaphthene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Acenaphthylene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Anthracene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Benzidine	<0.0200	mg/l	0.0200	EPA 625	06/16/2014	09:30	574
Benzo(a)anthracene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Benzo(a)pyrene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Benzo(b)fluoranthene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Benzo(ghi)perylene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Benzo(k)fluoranthene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
4-Bromophenyl phenyl ether	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Butylbenzyl Phthalate	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
4-Chloro-3-methylphenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Bis(2-Chloroethoxy)methane	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Bis(2-Chloroethyl)ether	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Bis(2-Chloroisopropyl)ether	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
2-Chloronaphthalene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
2-Chlorophenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
4-Chlorophenyl phenyl ether	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Chrysene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Di-n-butyl Phthalate	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Di-n-octyl Phthalate	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Dibenzo(a,h)anthracene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
3,3-Dichlorobenzidine	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
2,4-Dichlorophenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Diethyl Phthalate	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
2,4-Dimethylphenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Dimethyl Phthalate	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
2,4-Dinitrophenol	<0.0200	mg/l	0.0200	EPA 625	06/16/2014	09:30	574
2,4-Dinitrotoluene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574





Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 07/14/2014
Job #: 0007279
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Part D

Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
2,6-Dinitrotoluene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
1,2-Diphenylhydrazine	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Bis(2-Ethylhexyl)Phthalate	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Fluoranthene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Fluorene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Hexachlorobenzene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Hexachlorobutadiene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Hexachlorocyclopentadiene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Hexachloroethane	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Indeno(1,2,3-cd)pyrene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Isophorone	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
4,6-Dinitro-o-cresol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Naphthalene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Nitrobenzene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
2-Nitrophenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
4-Nitrophenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
N-nitrosodimethylamine	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
N-nitrosodi-n-propylamine	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
N-nitrosodiphenylamine	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Pentachlorophenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Phenanthrene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Phenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
Pyrene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
1,2,4-Trichlorobenzene	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
2,4,6-Trichlorophenol	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
2,3,7,8-Tetrachlorodibenzodiox	<0.0100	mg/l	0.0100	EPA 625	06/16/2014	09:30	574
624 Volatiles							

574 Samples subcontracted to VELAP ID# 460160



VELAP Lab ID # 460019 VA DW Lab ID # 00115

SAMPLE CHAIN OF CUSTODY RECORD

Company: Town of Orange
 Contact: Michelle Steinberger
 Address: 119 Bellevue Avenue
 Address: Orange, Virginia 22960
 Phone: 672-3112; -6490 (fax)

ENVIRONMENTAL SYSTEMS SERVICE, LTD.



Environmental Systems Service, Ltd.

218 North Main St.
 Post Office Box 520
 Culpeper, VA 22701
 800-541-2116
 540-825-6660 Fax: 540-825-4961
www.ess-services.com

Project Name/Site:

P.O.#

Sampled By: Sean M. Davies

(Print Name)

(Signature)

ESS COLLECTION SAMPLE
SAMPLE ID. DATE TIME LOCATION

1353 6/12/14 Effluent

CONTAINERS	G/P #	GRAB	SAMPLE	MATRIX	PRESERVATIVE
250ml P	4	X	WW	H2SO4	
500ml P	1	X	WW	none	
250 P	1	X	WW	HNO3	
1L G	2	X	WW	None	
40ml G	3	X	WW	HCL	

Received by:

Sean

Date: 6/14/14

Time: 1442

Received by:

CJ

Date: 6/14/14</p



June 3, 2015

Michelle Steinberger
Town of Orange WWTP
13222 Spicers Mill Road
Orange, VA 22960

Re: Outfall 001 Expanded Effluent Metal's Data

Dear Michelle:

Environmental Systems Service, Ltd. (ESS) is pleased to submit the results for clean metals sampling conducted on April 1, 2015. All samples were pumped grab samples. Metals were analyzed by Albion Environmental. Attachments include raw data for all metal's analyses.

Parameter	Reported Level (ppb)
	Total Recoverable
Antimony	0.26
Arsenic	<1.0
Beryllium	<0.50
Cadmium	<0.10
Chromium (T)	<1.0
Copper	2.31
Lead	0.19
Mercury	0.00153
Nickel	1.88
Selenium	<2.0
Silver	<0.10
Thallium	<0.10
Zinc	23.2

ESS appreciates the opportunity to provide clean sampling and analytical services. If you have any questions, please feel free to contact me at 540-825-6660.

Sincerely,

Angie Woodward

Angie Woodward
Lab Manager

Attachments



218 North Main St. ♦ P.O. Box 520 ♦ Culpeper, Virginia 22701 ♦ Tel: (540) 825-6660 ♦ Fax (540) 825-4961 ♦ www.ess-services.com

Revised Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 10/07/2015
Report #: 1694
Job #:
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Extra Permit Renewal

The test results submitted in this report relate only to the samples submitted and as received by Environmental Systems Service, Ltd (ESS).

ESS assumes no responsibility, express or implied, as to the interpretation of the analytical results contained in this report.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise noted.

This laboratory report may not be reproduced, except in full, without the written approval of ESS.

If you have received this report in error, please notify ESS immediately at (540) 825-6660.

Approved by: Angie Woodward

A. Woodward/Technical Director

Reviewers Initials AW



VELAP Lab ID # 460019 VA DW Lab ID # 00115



Revised Analytical Report

Orange, Town of - WWTP
 ATTN: Michelle Steinberger
 119 Bellevue Avenue
 Orange, VA 22960

Report Date: 10/07/2015
 Report #: 1694
 Job #:
 Customer #: 0005706
 Customer PO #:
 Collected By: ESS Employee
 Sample Location: Extra Permit Renewal

Sample ID#:	49067R	Sample Source:	Outfall 001
Sample Date/Time:	04/01/2015 / 08:00	Date Received:	04/01/2015

Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
Ammonia, as N	1.36	mg/l	0.10	SM 4500-NH3D-2011	04/04/2015	09:45	BW
Total Kjeldahl Nitrogen	3.84	mg/l	0.50	SM 4500 NH3C-2011	04/04/2015	08:30	ES
Nitrite + Nitrate	0.604	mg/l	0.0500	SM4500NO3F-2011	04/09/2015	07:00	574
Phosphorus, Total	0.17	mg/l	0.05	SM 4500-P E-2011	04/02/2015	10:15	ES
Total Dissolved Solids	273	mg/l	10.0	SM 2540 C-2011	04/03/2015	16:31	JI
Total Hardness as CaCO ₃	160	mg/l	2.00	SM 2340 C-2011	04/14/2015	14:00	ES
625 Semi-Volatiles							
Acenaphthene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Acenaphthylene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Anthracene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Benzidine	< 0.0200	mg/l	0.0200	EPA 625	04/07/2015	18:36	574
Benzo(a)anthracene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Benzo(a)pyrene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Benzo(b)fluoranthene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Benzo(ghi)perylene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Benzo(k)fluoranthene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
4-Bromophenyl phenyl ether	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Butylbenzyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
4-Chloro-3-methylphenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Bis(2-Chloroethoxy)methane	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Bis(2-Chloroethyl)ether	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Bis(2-Chloroisopropyl)ether	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
2-Chloronaphthalene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
2-Chlorophenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
4-Chlorophenyl phenyl ether	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Chrysene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Di-n-butyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Di-n-octyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Dibenzo(a,h)anthracene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
3,3-Dichlorobenzidine	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
2,4-Dichlorophenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Diethyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574





Revised Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 10/07/2015
Report #: 1694
Job #:
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Extra Permit Renewal

Sample ID#:	49067R	Sample Source:	Outfall 001				
Sample Date/Time:	04/01/2015 / 08:00	Date Received:	04/01/2015				
Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
2,4-Dimethylphenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Dimethyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
2,4-Dinitrophenol	< 0.0200	mg/l	0.0200	EPA 625	04/07/2015	18:36	574
2,4-Dinitrotoluene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
2,6-Dinitrotoluene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
1,2-Diphenylhydrazine	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Bis(2-Ethylhexyl)Phthalate	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Fluoranthene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Fluorene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Hexachlorobenzene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Hexachlorobutadiene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Hexachlorocyclopentadiene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Hexachloroethane	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Indeno(1,2,3-cd)pyrene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Isophorone	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
4,6-Dinitro-o-cresol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Naphthalene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Nitrobenzene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
2-Nitrophenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
4-Nitrophenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
N-nitrosodimethylamine	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
N-nitrosodi-n-propylamine	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
N-nitrosodiphenylamine	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Pentachlorophenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Phenanthrene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Phenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
Pyrene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
1,2,4-Trichlorobenzene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
2,4,6-Trichlorophenol	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
1,2-Dichlorobenzene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
1,3-Dichlorobenzene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574
1,4-Dichlorobenzene	< 0.0100	mg/l	0.0100	EPA 625	04/07/2015	18:36	574





Revised Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 10/07/2015
Report #: 1694
Job #:
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Extra Permit Renewal

Sample ID#:	49067R	Sample Source:	Outfall 001				
Sample Date/Time:	04/01/2015 / 08:00	Date Received:	04/01/2015				
Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT

COMMENT:

This revised report replaces the original report issued 4/27/15. Report revised for unit conversion per client request.

574 Samples subcontracted to VELAP ID# 460160



VELAP Lab ID # 460019 VA DW Lab ID # 00115



218 North Main St. ♦ P.O. Box 520 ♦ Culpeper, Virginia 22701 ♦ Tel: (540) 825-6660 ♦ Fax (540) 825-4961 ♦ www.ess-services.com

Revised Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 10/07/2015
Report #: 1695
Job #:
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Extra Sampling - Permit Renewal

The test results submitted in this report relate only to the samples submitted and as received by Environmental Systems Service, Ltd (ESS).

ESS assumes no responsibility, express or implied, as to the interpretation of the analytical results contained in this report.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise noted.

This laboratory report may not be reproduced, except in full, without the written approval of ESS.

If you have received this report in error, please notify ESS immediately at (540) 825-6660.

Approved by: Angie Woodward

A. Woodward/Technical Director

Reviewers Initials AW



VELAP Lab ID # 460019 VA DW Lab ID # 00115



Revised Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 10/07/2015
Report #: 1695
Job #:
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Extra Sampling - Permit Renewal

Sample ID#:	49077R	Sample Source:	Effluent				
Sample Date/Time:	04/01/2015 / 08:30	Date Received:	04/01/2015				
Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
Total Cyanide	< 0.005	mg/l	0.005	EPA 335.4	04/09/2015	11:19	013
Phenols, Total	< 0.02	mg/l	0.02	EPA 420.4	04/07/2015	14:32	013
HEM; Oil & Grease 624 Volatiles	< 5.00	mg/l	5.00	EPA 1664A	04/09/2015	14:25	574
Acrolein	< 0.0100	mg/l	0.0100	EPA 624	04/09/2015	14:41	574
Acrylonitrile	< 0.0100	mg/l	0.0100	EPA 624	04/09/2015	14:41	574
Benzene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Dichlorobromomethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Bromoform	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Bromomethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Carbon Tetrachloride	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Chlorobenzene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Chlorodibromomethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Chloroethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
2-Chloroethylvinylether	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Chloroform	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Chloromethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
1,1-Dichloroethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
1,2-Dichloroethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
1,1-Dichloroethene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
trans-1,2-Dichloroethene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
1,2-Dichloropropane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
cis-1,3-Dichloropropene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
trans-1,3-Dichloropropene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Ethylbenzene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Methylene Chloride	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
1,1,2,2-Tetrachloroethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Tetrachloroethene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Toluene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
1,1,1-Trichloroethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
1,1,2-Trichloroethane	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574
Trichloroethene	< 0.00200	mg/l	0.00200	EPA 624	04/09/2015	14:41	574





September 8, 2015

Michelle Steinberger
Town of Orange WWTP
13222 Spicers Mill Road
Orange, VA 22960

Re: Outfall 001 Expanded Effluent Metal's Data

Dear Michelle:

Environmental Systems Service, Ltd. (ESS) is pleased to submit the results for clean metals sampling conducted on August 5, 2015. All samples were pumped grab samples. Metals were analyzed by Albion Environmental. Attachments include raw data for all metal's analyses.

Parameter	Reported Level (ppb)
	Total Recoverable
Antimony	0.408
Arsenic	<1.0
Beryllium	<0.50
Cadmium	<0.10
Chromium (T)	<1.0
Copper	1.32
Lead	0.297
Mercury	0.00590
Nickel	2.61
Selenium	<2.0
Silver	<0.10
Thallium	<0.10
Zinc	49.4

ESS appreciates the opportunity to provide clean sampling and analytical services. If you have any questions, please feel free to contact me at 540-825-6660.

Best regards,

A handwritten signature in black ink, appearing to read "Donald Hearl".

Donald Hearl
Vice President

Attachments

ESS / Orange VA Clean Metals Study
 Final Total Recoverable Trace Metals & Mercury Data for Effluent Sample Collected 8-5-2015
 (Data Report W0830-9457-014)

Sample ID	Coll Date	Location	Sample Type	Matrix	Processing	Method	Anal. Date	Ag	As	Be	Cd	Cr(T)	Cu	Ni	Pb	Sb	Se	Tl	Zn
Trace Metals Field Samples (Note 1)																			
Notes:																			
1 Trace metals data are reported in units of micrograms per liter (parts per billion) and relate only to the samples listed. Samples were received in good condition from the sponsor (ESS 218 North Main Street, Culpeper, VA 22701). Analyses without the written approval of Albion Environmental (AE) shall not be reproduced except in full.																			
2 Samples were analyzed according to EPA method 200.8. However, EPA method 200.8 is NOT a clean metals method and contains no requirements for contamination control during sample collection or analysis. AE uses the clean metals sampling and analytical guidance and procedures in EPA methods 1669 (sampling) and 1638 (ICP-MS analysis) for handling present in surface waters and many wastewaters. The EPA 200.8 (mod) annotation is used to indicate that EPA method 200.8 has been modified to include the clean metals sampling and analytical procedures found in EPA methods 1669 and 1638. The trace metals data reported here are compliant with EPA method 200.8 and meet all requirements of AE's Texas NELAP accreditation and secondary accreditation through the State of Virginia.																			
3 Samples in this analytical group were analyzed by ICP-MS according to EPA method 200.8 (modified) optimized for low-level metals analyses. The following Clean Water Act approved modifications were used in the analysis of this sample set: a Silver, Be, Cd, Cu, Ni, Pb, Sb, Ti and Zn were analyzed by standard mode ICP-MS (no modifications) b EPA method 200.8 modified for dynamic reaction cell (DRC) ICP-MS using ammonia as the cell gas was used to determine Sb & Cr. DRC ICP-MS is an interference control technology designed to reduce known polyatomic interferences that can result in an overestimation of the true elemental concentration present in a sample when analyzed by standard mode ICP-MS. c EPA method 200.8 modified for dynamic reaction cell (DRC) ICP-MS using oxygen as the cell gas was used to determine arsenic																			
Field Quality Assurance (QA) Samples																			
Equipment Blanks																			
RR-1234 NN-6133	4/9/2012 7/23/2010	Albion Env Albion Env	Bottle Blank (125 mL) Sampler Blank	DIW DIW	Total Rec Total Rec	EPA 200.8 (mod) EPA 200.8 (mod)	4/11/2012 9/2/2010	< 0.10 < 0.10	< 0.50 < 0.50	< 0.10 < 0.10	< 10 < 10	< 0.30 < 0.30	< 10 < 10	< 0.050 < 0.050	< 0.10 < 0.10	< 2.0 < 2.0	< 0.10 < 0.10	< 0.50 < 0.50	
Field Blank																			
WW-1289	8/5/2015 0835	Outfall 001	Pumped Grab Field Blank	DIW	Total Rec	Notes 2.3	8/24/2015	< 0.10	< 0.10	< 0.50	< 0.10	< 10	< 0.30	< 10	< 0.05	< 0.1	< 2.0	< 0.50	
Laboratory Quality Assurance Samples																			
Reporting Limits (MLs)																			
Reference Material	NIST-1640	Albion Env	NIST SRM	Water	Total Rec	Notes 2.3	8/24/2015	7.61	8.19	3.17	3.98	36.8	84.3	25.2	11.8	50.5	20.5	55.2	
Certified Values								97	101	105	100	91	98	100	98	99	102	101	107
Percent Recovery (% R)																			
Matrix Spike	See Data Report W0830-9457-001 dated 5-4-2015 for matrix spike/ MS duplicate analyses of this effluent matrix																		
Blank Spike	LCS-1	Albion Env	Digestion Blank Spike	DIW	Total Rec	Notes 2.3	8/24/2015	1.89	1.99	2.05	1.96	1.84	1.89	1.97	1.94	1.95	1.99	1.93	1.74
Expected Increase % R								95	100	103	98	92	95	99	97	98	100	97	87
Percent Recovery at Reporting Limit (ML, Low Calibration Standard) (Note 3)																			
Cal'd 1	Albion Env	Cal Std at ≤ ML	DIW	Total Rec	Notes 2.3	8/24/2015	0.055	1.01	0.51	0.096	0.48	0.19	0.54	0.052	0.055	2.01	0.054	0.49	
Expected %R								110	101	102	96	95	96	108	104	109	101	107	98
Method Blank	MBL-K-2	Albion Env	Method Blank	DIW	Total Rec	Notes 2.3	8/24/2015	< 0.10	< 0.50	< 1.0	< 0.10	< 0.30	< 1.0	< 0.50	< 0.10	< 2.0	< 0.10	< 0.50	

APPROVED *P.N. Bootle*
 Dr. P N Bootle, Laboratory Manager
 Texas NELAP Accreditation T104704391-14-6

ESS / Orange VA Clean Metals & Mercury Study
 Final Total Recoverable Effluent Mercury Data for Samples Collected 8-5-2015
 (Data Report W0830-9457-013)

Sample ID	Coll Date	Location	Sample Type	Matrix	Processing	Method	Anal. Date	Dil. Fac.	Hg (ppb)
Field Samples (Notes 1,2)									
WW-1274	8/5/2015 0840	Outfall 001	Pumped Grab	Effluent	Total Rec.	EPA 1631e	8/26/2015	1	0.00590
Notes:									
1. Mercury (Hg) concentration units are micrograms per liter (= parts per billion, ppb) and relate only to the samples listed. Samples were received in good condition from the sponsor (ESS, 218 North Main Street, Culpeper, VA 22701). Analyses performed at the 1703 Austin Ave., College Station, TX facility. This data report shall not be reproduced except in full, without the written approval of Albion Environmental (AE). The Hg data reported here meet all NELAP requirements under AE's Texas NELAP accreditation and secondary Virginia accreditation (VELAP ID: 460183).									
Field Quality Assurance (QA) Samples									
Equipment Blanks									
TT-2199	6/3/2014	Albion Env.	Bottle Blank (125)	DIW	Total Rec.	EPA 1631e	6/5/2014	1	< 0.00020
SS-1928	8/8/2013	Albion Env.	Bottle Blank (250)	DIW	Total Rec.	EPA 1631e	8/20/2013	1	< 0.00020
MM-3912	8/24/2009	Albion Env.	Sampler Blank	DIW	Total Rec.	EPA 1631e	9/3/2010	1	< 0.00020
Field Blank									
WW-1271	8/5/2015 0830	Outfall 001	Pumped Field Blank	DIW	Total Rec.	EPA 1631e	8/26/2015	1	< 0.0002
Field Duplicate									
No field duplicate samples were collected during this sampling event.									
Laboratory Quality Assurance Samples									
Reporting Limit (undiluted, ppb)									
EPA 1631e									
0.0005									
Method Detection Limit (undiluted, ppb)									
EPA 1631e									
0.0002									
Certified Reference Material									
TMA-989		Albion Env.	EPA Ref Std	Water	Total Rec.	EPA 1631e	8/26/2015	20220	215
Certified Value								202	
% R								106	
Matrix Spike									
See Data Report P0107-9457-011 dated 1-7-2011 for matrix spike/MS duplicate analyses of the effluent matrix.									
Blank Spikes									
LCS-1		Albion Env.	Blank Spike	DIW	Total Rec.	EPA 1631e	8/26/2015	1	0.00207
Expected								0.00200	
% R								104	
QC55 NIST-1641d-1		Albion Env.	NIST Ind. Check Std	DIW	Total Rec.	EPA 1631e	8/26/2015	1	0.00480
Expected Value								0.00500	
% R								96	
QC55 NIST-3133-1		Albion Env.	NIST Ind. Check Std	DIW	Total Rec.	EPA 1631e	8/26/2015	1	0.00510
Expected Value								0.00500	
% R								102	
Percent Recovery at Reporting Limit (ML, Low Calibration Standard)									
CalStd-1		Albion Env.	Calibration Std	DIW	Total Rec.	EPA 1631e	8/26/2015	1	0.000482
Reporting Limit (ML)								0.000500	
% R								96	
Method Blanks									
M-BLK-8		Albion Env.	Method Blank	DIW	Total Rec.	EPA 1631e	8/26/2015	1	< 0.00020
M-BLK-9		Albion Env.	Method Blank	DIW	Total Rec.	EPA 1631e	8/26/2015	1	< 0.00020
M-BLK-10		Albion Env.	Method Blank	DIW	Total Rec.	EPA 1631e	8/26/2015	1	< 0.00020

APPROVED 
 Dr. P.N. Boothe, Laboratory Manager
 Texas NELAP Accreditation T104704391-14-6



218 North Main St. ♦ P.O. Box 520 ♦ Culpeper, Virginia 22701 ♦ Tel: (540) 825-6660 ♦ Fax (540) 825-4961 ♦ <www.ess-services.com>

Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 08/28/2015
Report #: 4367
Job #: 0004524
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Permit Renewal

The test results submitted in this report relate only to the samples submitted and as received by Environmental Systems Service, Ltd (ESS).

ESS assumes no responsibility, express or implied, as to the interpretation of the analytical results contained in this report.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise noted.

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If you have received this report in error, please notify ESS immediately at (540) 825-6660.

A handwritten signature in cursive ink that reads "Angie Woodward".

Approved by: _____

A. Woodward/Technical Director

Reviewers Initials AW



VELAP Lab ID # 460019 VA DW Lab ID # 00115



Analytical Report

Orange, Town of - WWTP
 ATTN: Michelle Steinberger
 119 Bellevue Avenue
 Orange, VA 22960

Report Date: 08/28/2015
 Report #: 4367
 Job #: 0004524
 Customer #: 0005706
 Customer PO #:
 Collected By: ESS Employee
 Sample Location: Permit Renewal

Sample ID#:	0055185	Sample Source:	Final Effluent
Sample Date/Time:	08/05/2015 / 08:20	Date Received:	08/05/2015

Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
Ammonia, as N	< 0.10	mg/l	0.10	SM 4500-NH3D-2011	08/09/2015	09:00	BW
Total Kjeldahl Nitrogen	0.90	mg/l	0.50	SM 4500 NH3C-2011	08/12/2015	11:15	SP
Nitrite + Nitrate	0.522	mg/l	0.0500	SM4500NO3F-2011	08/10/2015	14:00	574
Phosphorus, Total	0.07	mg/l	0.05	SM 4500-P E-2011	08/05/2015	13:05	SP
Total Dissolved Solids	245	mg/l	10.0	SM 2540 C-2011	08/05/2015	17:00	JI
Total Hardness as CaCO ₃	114	mg/l	0.0500	EPA 200.7	08/11/2015	09:53	574
625 Semi-Volatiles							
Acenaphthene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Acenaphthylene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Anthracene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Benzidine	< 0.0100	mg/l	0.0200	EPA 625	08/11/2015	13:13	574
Benzo(a)anthracene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Benzo(a)pyrene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Benzo(b)fluoranthene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Benzo(ghi)perylene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Benzo(k)fluoranthene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
4-Bromophenyl phenyl ether	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Butylbenzyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
4-Chloro-3-methylphenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Bis(2-Chloroethoxy)methane	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Bis(2-Chloroethyl)ether	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Bis(2-Chloroisopropyl)ether	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
2-Chloronaphthalene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
2-Chlorophenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
4-Chlorophenyl phenyl ether	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Chrysene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Di-n-butyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Di-n-octyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Dibenzo(a,h)anthracene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
3,3-Dichlorobenzidine	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
2,4-Dichlorophenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Diethyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574





Analytical Report

Orange, Town of - WWTP
 ATTN: Michelle Steinberger
 119 Bellevue Avenue
 Orange, VA 22960

Report Date: 08/28/2015
 Report #: 4367
 Job #: 0004524
 Customer #: 0005706
 Customer PO #:
 Collected By: ESS Employee
 Sample Location: Permit Renewal

Sample ID#:	0055185	Sample Source:	Final Effluent
Sample Date/Time:	08/05/2015 / 08:20	Date Received:	08/05/2015

Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
2,4-Dimethylphenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Dimethyl Phthalate	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
2,4-Dinitrophenol	< 0.0200	mg/l	0.0200	EPA 625	08/11/2015	13:13	574
2,4-Dinitrotoluene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
2,6-Dinitrotoluene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
1,2-Diphenylhydrazine	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Bis(2-Ethylhexyl)Phthalate	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Fluoranthene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Fluorene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Hexachlorobenzene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Hexachlorobutadiene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Hexachlorocyclopentadiene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Hexachloroethane	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Indeno(1,2,3-cd)pyrene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Isophorone	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
4,6-Dinitro-o-cresol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Naphthalene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Nitrobenzene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
2-Nitrophenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
4-Nitrophenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
N-nitrosodimethylamine	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
N-nitrosodi-n-propylamine	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
N-nitrosodiphenylamine	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Pentachlorophenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Phenanthrene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Phenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
Pyrene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
1,2,4-Trichlorobenzene	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
2,4,6-Trichlorophenol	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574
2,3,7,8-Tetrachlorodibenzodiox	< 0.0100	mg/l	0.0100	EPA 625	08/11/2015	13:13	574





Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 08/28/2015
Report #: 4367
Job #: 0004524
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Permit Renewal

574 Samples subcontracted to VELAP ID# 460160



VELAP Lab ID # 460019 VA DW Lab ID # 00115



218 North Main St. ♦ P.O. Box 520 ♦ Culpeper, Virginia 22701 ♦ Tel: (540) 825-6660 ♦ Fax (540) 825-4961 ♦ <www.ess-services.com>

Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 08/28/2015
Report #: 4368
Job #: 0004524
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Expanded Effluent

The test results submitted in this report relate only to the samples submitted and as received by Environmental Systems Service, Ltd (ESS).

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The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise noted.

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A handwritten signature in black ink that reads "Angie Woodward".

Approved by: _____

A. Woodward/Technical Director

Reviewers Initials AW



VELAP Lab ID # 460019 VA DW Lab ID # 00115



Analytical Report

Orange, Town of - WWTP
 ATTN: Michelle Steinberger
 119 Bellevue Avenue
 Orange, VA 22960

Report Date: 08/28/2015
 Report #: 4368
 Job #: 0004524
 Customer #: 0005706
 Customer PO #:
 Collected By: ESS Employee
 Sample Location: Expanded Effluent

Sample ID#:	0055186	Sample Source:	Effluent
Sample Date/Time:	08/05/2015 / 09:05	Date Received:	08/05/2015

Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
Total Cyanide	< 0.005	mg/l	0.005	EPA 335.4	08/10/2015	13:16	013
Phenols, Total	< 0.02	mg/l	0.02	EPA 420.4	08/07/2015	16:02	013
HEM; Oil & Grease	< 5.00	mg/l	5.00	EPA 1664A	08/14/2015	10:37	574
624 Volatiles							
Acrolein	< 0.0100	mg/l	0.0100	EPA 624	08/10/2015	15:04	574
Acrylonitrile	< 0.00500	mg/l	0.00500	EPA 624	08/10/2015	15:04	574
Benzene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Dichlorobromomethane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Bromoform	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Bromomethane	< 0.00500	mg/l	0.00500	EPA 624	08/10/2015	15:04	574
Carbon Tetrachloride	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Chlorobenzene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Chlorodibromomethane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Chloroethane	< 0.00500	mg/l	0.00500	EPA 624	08/10/2015	15:04	574
2-Chloroethylvinylether	< 0.0200	mg/l	0.0200	EPA 624	08/10/2015	15:04	574
Chloroform	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Chloromethane	< 0.00500	mg/l	0.00500	EPA 624	08/10/2015	15:04	574
1,2-Dichlorobenzene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
1,3-Dichlorobenzene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
1,4-Dichlorobenzene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
1,1-Dichloroethane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
1,2-Dichloroethane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
1,1-Dichloroethene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
trans-1,2-Dichloroethene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
1,2-Dichloropropane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
cis-1,3-Dichloropropene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
trans-1,3-Dichloropropene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Ethylbenzene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Methylene Chloride	< 0.00500	mg/l	0.00500	EPA 624	08/10/2015	15:04	574
1,1,2,2-Tetrachloroethane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Tetrachloroethene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Toluene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574





Analytical Report

Orange, Town of - WWTP
ATTN: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Report Date: 08/28/2015
Report #: 4368
Job #: 0004524
Customer #: 0005706
Customer PO #:
Collected By: ESS Employee
Sample Location: Expanded Effluent

Sample ID#:	0055186	Sample Source:	Effluent
Sample Date/Time:	08/05/2015 / 09:05	Date Received:	08/05/2015

Parameter	Results	Unit	Report Limit	Method	Analysis Date	Time	INIT
1,1,1-Trichloroethane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
1,1,2-Trichloroethane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Trichloroethene	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Trichlorofluoromethane	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574
Vinyl Chloride	< 0.00200	mg/l	0.00200	EPA 624	08/10/2015	15:04	574

574 Samples subcontracted to VELAP ID# 460160
013 Samples subcontracted to VELAP ID# 460013



VELAP Lab ID # 460019 VA DW Lab ID # 00115



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www.ess-services.com

Email: info@ess-services.com

4268

CHAIN OF CUSTODY RECORD

Additional Notes/ Comments/ Special Instructions:

Sp. Part. Phenol

Company **Town of Orange**

Contact **Michelle Steinberger**

Address **119 Bellevue Avenue**

Address **Orange, Virginia 22960**

Phone **672-3112; -6490 (fax)**

Project Name/Site **Exploded Effluent**

P.O.# **None**

(Print Name)

Sampled By: **Sean Miani**

Received by: **None**

Date: **8/15/15**

Time: **1200**

Received by: **None**



Analytical Results

R5B14615

Enviro Compliance Laboratories, Inc.
10357 Old Keeton Road
Ashland, Virginia 23005-8110
(804)550-3971
Fax: (804)550-3826
www.envirocompliance.com
email: labdirector@envirocompliance.com

Town of Orange WWTP
Attn: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Date Received: November 13, 2015
Date Issued : November 17, 2015

Lab # R5B14615 - 1(A-B)/Sample ID : Final Effluent

Parameter	Result	Units	QL	Sampled: November 01-02, 2015 08:00-08:00	Date/Time	Prepared	Analyzed	Method	Analyst
Copper	BQL	ug/l	2		11-16/0800	11-16/1419	200.8R5.4	MAC	
Zinc	34	ug/l	2		11-16/0800	11-16/1419	200.8R5.4	MAC	
Hardness	128	mg/l	2		11-13/1410	11-13/1440	D1126-07	LAH	

Lab # R5B14615 - 2(A-B)/Sample ID : Final Effluent

Parameter	Result	Units	QL	Sampled: November 02-03, 2015 08:00-08:00	Date/Time	Prepared	Analyzed	Method	Analyst
Copper	BQL	ug/l	2		11-16/0800	11-16/1423	200.8R5.4	MAC	
Zinc	34	ug/l	2		11-16/0800	11-16/1423	200.8R5.4	MAC	
Hardness	120	mg/l	2		11-13/1410	11-13/1440	D1126-07	LAH	

Lab # R5B14615 - 3(A-B)/Sample ID : Final Effluent

Parameter	Result	Units	QL	Sampled: November 03-04, 2015 08:00-08:00	Date/Time	Prepared	Analyzed	Method	Analyst
Copper	BQL	ug/l	2		11-16/0800	11-16/1427	200.8R5.4	MAC	
Zinc	33	ug/l	2		11-16/0800	11-16/1427	200.8R5.4	MAC	
Hardness	112	mg/l	2		11-13/1410	11-13/1440	D1126-07	LAH	

Lab # R5B14615 - 4(A-B)/Sample ID : Final Effluent

Parameter	Result	Units	QL	Sampled: November 04-05, 2015 08:00-08:00	Date/Time	Prepared	Analyzed	Method	Analyst
Copper	5	ug/l	2		11-16/0800	11-16/1431	200.8R5.4	MAC	
Zinc	54	ug/l	2		11-16/0800	11-16/1431	200.8R5.4	MAC	
Hardness	168	mg/l	2		11-13/1410	11-13/1440	D1126-07	LAH	

Lab # R5B14615 - 5(A-B)/Sample ID : Final Effluent

Parameter	Result	Units	QL	Sampled: November 05-06, 2015 08:00-08:00	Date/Time	Prepared	Analyzed	Method	Analyst
Copper	BQL	ug/l	2		11-16/0800	11-16/1435	200.8R5.4	MAC	
Zinc	36	ug/l	2		11-16/0800	11-16/1435	200.8R5.4	MAC	
Hardness	168	mg/l	2		11-13/1410	11-13/1440	D1126-07	LAH	

Lab # R5B14615 - 6(A-B)/Sample ID : Final Effluent

Parameter	Result	Units	QL	Sampled: November 06-07, 2015 08:00-08:00	Date/Time	Prepared	Analyzed	Method	Analyst
Copper	BQL	ug/l	2		11-16/0800	11-16/1439	200.8R5.4	MAC	

BQL = Below Quantitation Level (Result is less than stated QL)
All data meets NELAC requirements unless otherwise noted.

Report #: R5B14615 Page 1 of 3

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Analytical Results

R5B14615

Enviro Compliance Laboratories, Inc.
10357 Old Keeton Road
Ashland, Virginia 23005-8110
(804)550-3971
Fax: (804)550-3826
www.envirocompliance.com
email: labdirector@envirocompliance.com

Town of Orange WWTP
Attn: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Date Received: November 13, 2015
Date Issued : November 17, 2015

Lab # R5B14615 - 6(A-B)/Sample ID : Final Effluent

Parameter	Result	Units	QL	Prepared	Date/Time	Analyzed	Method	Analyst
Zinc	35	ug/l	2	11-16/0800	11-16/1439	200.8R5.4	MAC	
Hardness	168	mg/l	2	11-16/1550	11-16/1625	D1126-07	LAH	

Lab # R5B14615 - 7(A-B)/Sample ID : Final Effluent

Parameter	Result	Units	QL	Prepared	Date/Time	Analyzed	Method	Analyst
Copper	BQL	ug/l	2	11-16/0800	11-16/1443	200.8R5.4	MAC	
Zinc	47	ug/l	2	11-16/0800	11-16/1443	200.8R5.4	MAC	
Hardness	152	mg/l	2	11-16/1550	11-16/1625	D1126-07	LAH	

R5B14615

R5B14615

BQL = Below Quantitation Level (Result is less than stated QL)
All data meets NELAC requirements unless otherwise noted.

Greg L. Hudson
Laboratory Director

Report #: R5B14615 Page 2 of 3

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VELAP ID#: 460032





Report Annex

Enviro Compliance Laboratories, Inc.
10357 Old Keeton Road
Ashland, Virginia 23005-8110
(804)550-3971
Fax: (804)550-3826
www.envirocompliance.com
email: labdirector@envirocompliance.com

Abbreviations:

NR = Not Reported
ND = Not Detected
BQL = Below Quantitation Level (Result is less than stated QL or <QL)
< = Result is less than Quantitation Limit
J = Result is estimated outside of calibration range

Quality Assurance Flags:

L = LCS did not meet method criteria.
HT = Sample was not analyzed/received within holding time.
T = Sample was not received at appropriate temperature (<6.0C)
P = Sample was not properly preserved or received in inappropriate container.
R = Corr Coef <.995
C = Initial Instrument Calibration (Second Source) did not meet criteria
V = Continuing Calibration Verification did not meet criteria
S = Matrix Spike did not meet criteria
D = Duplicate did not meet criteria
SR = Surrogate Recovery was not in acceptable limits.
H/B = Blank did not meet QC criteria
TOX = Toxicity exhibited in BOD
G = GGA/Int. QC was not 198.5+/-30.5
Y = Yield not within 2-200mg
Cl = Residual chlorine was detected in the micro sample >15mg/l.
 Micro methods do not perform properly for samples with residual chlorine.
* = Analysis was subcontracted
** = Non-accreditable/non-accredited parameter

Notes:

Analysis was performed in accordance to NELAC requirements unless otherwise noted.
All methods are 40 CFR 136 May 18, 2012, Table IB approved.





Analytical Results

R5B14617

Enviro Compliance Laboratories, Inc.
10357 Old Keeton Road
Ashland, Virginia 23005-8110
(804)550-3971
Fax: (804)550-3826
www.envirocompliance.com
email: labdirector@envirocompliance.com

Town of Orange WWTP
Attn: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Date Received: November 13, 2015
Date Issued : November 19, 2015

Lab # R5B14617 - 1(A-B)/Sample ID : Influent

Parameter	Result	Units	QL	Date/Time Prepared	Date/Time Analyzed	Method	Analyst
Copper	25	ug/l	2	11-18/0800	11-18/1354	200.8R5.4	MAC
Zinc	106	ug/l	2	11-18/0800	11-18/1354	200.8R5.4	MAC
Hardness	48	mg/l	2	11-13/1410	11-13/1440	D1126-07	LAH

Lab # R5B14617 - 2(A-B)/Sample ID : Influent

Parameter	Result	Units	QL	Date/Time Prepared	Date/Time Analyzed	Method	Analyst
Copper	46	ug/l	2	11-18/0800	11-18/1449	200.8R5.4	MAC
Zinc	211	ug/l	2	11-18/0800	11-18/1449	200.8R5.4	MAC
Hardness	64	mg/l	2	11-13/1410	11-13/1440	D1126-07	LAH

Lab # R5B14617 - 3(A-B)/Sample ID : Influent

Parameter	Result	Units	QL	Date/Time Prepared	Date/Time Analyzed	Method	Analyst
Copper	22	ug/l	2	11-18/0800	11-18/1410	200.8R5.4	MAC
Zinc	75	ug/l	2	11-18/0800	11-18/1410	200.8R5.4	MAC
Hardness	72	mg/l	2	11-13/1410	11-13/1440	D1126-07	LAH

Lab # R5B14617 - 4(A-B)/Sample ID : Influent

Parameter	Result	Units	QL	Date/Time Prepared	Date/Time Analyzed	Method	Analyst
Copper	29	ug/l	2	11-18/0800	11-18/1414	200.8R5.4	MAC
Zinc	103	ug/l	2	11-18/0800	11-18/1414	200.8R5.4	MAC
Hardness	56	mg/l	2	11-13/1410	11-13/1440	D1126-07	LAH

Lab # R5B14617 - 5(A-B)/Sample ID : Influent

Parameter	Result	Units	QL	Date/Time Prepared	Date/Time Analyzed	Method	Analyst
Copper	28	ug/l	2	11-18/0800	11-18/1418	200.8R5.4	MAC
Zinc	100	ug/l	2	11-18/0800	11-18/1418	200.8R5.4	MAC
Hardness	64	mg/l	2	11-13/1410	11-13/1440	D1126-07	LAH

Lab # R5B14617 - 6(A-B)/Sample ID : Influent

Parameter	Result	Units	QL	Date/Time Prepared	Date/Time Analyzed	Method	Analyst
Copper	31	ug/l	2	11-18/0800	11-18/1422	200.8R5.4	MAC

BQL = Below Quantitation Level (Result is less than stated QL)
All data meets NELAC requirements unless otherwise noted.

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Analytical Results

R5B14617

Enviro Compliance Laboratories, Inc.
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Fax: (804)550-3826
www.envirocompliance.com
email: labdirector@envirocompliance.com

Town of Orange WWTP
Attn: Michelle Steinberger
119 Bellevue Avenue
Orange, VA 22960

Date Received: November 13, 2015
Date Issued : November 19, 2015

Lab # R5B14617 - 6(A-B)/Sample ID : Influent

Sampled: November 06-07, 2015 08:00-08:00

Parameter	Result	Units	QL	Date/Time Prepared	Date/Time Analyzed	Method	Analyst
Zinc	105	ug/l	2	11-18/0800	11-18/1422	200.8R5.4	MAC
Hardness	64	mg/l	2	11-16/1550	11-16/1625	D1126-07	LAH

Lab # R5B14617 - 7(A-B)/Sample ID : Influent

Sampled: November 07-08, 2015 08:00-08:00

Parameter	Result	Units	QL	Date/Time Prepared	Date/Time Analyzed	Method	Analyst
Copper	23	ug/l	2	11-18/0800	11-18/1426	200.8R5.4	MAC
Zinc	94	ug/l	2	11-18/0800	11-18/1426	200.8R5.4	MAC
Hardness	64	mg/l	2	11-16/1550	11-16/1625	D1126-07	LAH

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BQL = Below Quantitation Level (Result is less than stated QL)
All data meets NELAC requirements unless otherwise noted.

Greg L. Hudson
Laboratory Director

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VELAP ID#: 460032





Report Annex

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Abbreviations:

NR = Not Reported

ND = Not Detected

BQL = Below Quantitation Level (Result is less than stated QL or <QL)

< = Result is less than Quantitation Limit

J = Result is estimated outside of calibration range

Quality Assurance Flags:

L = LCS did not meet method criteria.

HT = Sample was not analyzed/received within holding time.

T = Sample was not received at appropriate temperature (<6.0C)

P = Sample was not properly preserved or received in inappropriate container.

R = Corr Coef < .995

C = Initial Instrument Calibration (Second Source) did not meet criteria

V = Continuing Calibration Verification did not meet criteria

S = Matrix Spike did not meet criteria

D = Duplicate did not meet criteria

SR = Surrogate Recovery was not in acceptable limits.

H/B = Blank did not meet QC criteria

TOX = Toxicity exhibited in BOD

G = GGA/Int. QC was not 198.5+/-30.5

Y = Yield not within 2-200mg

C1 = Residual chlorine was detected in the micro sample >15mg/l.

Micro methods do not perform properly for samples with residual chlorine.

* = Analysis was subcontracted

** = Non-accreditable/non-accredited parameter

Notes:

Analysis was performed in accordance to NELAC requirements unless otherwise noted.
All methods are 40 CFR 136 May 18, 2012, Table IB approved.

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PUBLIC NOTICE BILLING INFORMATION

I hereby authorize the Department of Environmental Quality to have the cost of publishing a public notice billed to the Agent/Department shown below. The public notice will be published once a week for two consecutive weeks in accordance with 9 VAC 25-31-290.C.2.

Agent/Department to be billed: Greg Wood, Town Manager

Owner: Town of Orange

Applicant's Address: 119 Bellevue Avenue

Orange, VA 22960-1401

Agent's Telephone Number: 540-672-5005

Authorizing Agent: 
Gregory S. Woods
Signature

VPDES Permit No. VA0021385
Facility Name Town of Orange WWTP

Please return to:

Permit Writer

Anna Westernik
VA-DEQ, NVRO
13901 Crown Court
Woodbridge, VA 22193-1453
Fax: (703)583-3821

VPDES PERMIT APPLICATION ADDENDUM

1. Entity to whom the permit is to be issued: Town of Orange
Who will be legally responsible for the wastewater treatment facilities and compliance with the permit? This may or may not be the facility or property owner.

2. Is this facility located within city or town boundaries? Yes No

3. Please provide the tax map parcel number for the land where the discharge is located: 28A-1 28A-2

4. For the facility to be covered by this permit, how many acres will be disturbed during the next five years due to new construction activities? NONE

5. What is the design average flow of this facility in million gallons per day (MGD)? 3.0 (MGD) For industrial facilities, provide the maximum 30-day average production level, include units: _____

6. In addition to the design flow or production level, should the permit be written with limits for any other discharge flow tiers or production levels? Yes No

If yes, please identify the other flow tiers in MGD: _____
Please consider the following as you answer the questions in #5 above for both the flow tiers and the production levels (if applicable): Do you plan to expand operations during the next five years? Is your facility's design flow considerably greater than your current flow?

7. Nature of operations generating wastewater: _____

99 % of flow from domestic connections/sources

Number of private residences to be served by the treatment works: _____

1 % of flow from non-domestic connections/sources

8. Mode of discharge: X Continuous _____ Intermittent _____ Seasonal _____

Describe frequency and duration of intermittent and seasonal discharges: _____

9. Identify the characteristics of the receiving stream at the point just above the facility's discharge point(s):

Stream Characteristic	Outfall Number					
Permanent stream, never dry	001					
Intermittent stream, usually flowing, sometimes dry						
Ephemeral stream, wet-weather flow, often dry						
Effluent-dependent stream, usually or always dry						
Lake or pond <u>at or below discharge point</u>						
Other:						

10. Approval date(s), if applicable:

O & M Manual 5-16-11

Sludge/Solids Management Plan

8-8-2011

Have there been changes in your operation or procedures since the above approval dates? Yes

No

11. **Privately Owned Treatment Works:** If this application is for a privately owned treatment works serving, or designed to serve, 50 or more residences, you must include with your application notification from the State Corporation Commission that you are incorporated in the Commonwealth and verification from the SCC that you are in compliance with all regulations and relevant orders of the State Corporation Commission. Incorporated also includes Limited Liability Companies (LLCs), Limited Partnerships (LPs) and certificates of authority.

12. Please provide a list of Materials stored at the facility. Please complete the table below or attach another page if more room is necessary.

Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Alum	8,000 gallons	1
Magnesium Hydroxide	4,000 gallons	1
Micro Glycerin	1,000 gallons	1

13. Please provide the name and email addresses for personnel who will be involved with the reissuance of the VPDES permit:

Name	Title	E-mail Address
Michelle Steinberger	Chief Operator	ams@townoforangeVA.org
Greg S Woods	Town Manager	townmanager@TownoforangeVA.org

14. Consent to receive Electronic Mail

The Department of Environmental Quality (DEQ) may deliver permits and certifications (this includes permit issuances, reissuances, modifications, revocation and reissuances, terminations and denials) to recipients, including applicants or permittees, by electronically certified mail where the recipients notify DEQ of their consent to receive mail electronically (§ 10.1-1183). Check *only one* of the following to consent to or decline receipt of electronic mail from DEQ as follows:

Applicant or permittee agrees to receive by electronic mail the permit that may be issued for the proposed pollutant management activity, and to certify receipt of such electronic mail when requested by the DEQ.

If yes, provide email: ams@townoforangeVA.org

Applicant or permittee declines to receive by electronic mail the permit that may be issued for the proposed pollutant management activity.